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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor, and Rebecca M. Reynolds, editorial assistant.

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NATURAL RESOURCES & CLIMATE

Atwood, Sanford S., chairman. LAND USE AND WILDLIFE RESOURCES. *Nat. Acad. Sci.* (Washington, D.C.). ix + 262 p. Price $6.95, paper. [From Biol. Abstr. 52(18), 1971.] *WR 143: 2*

Haugen, Arnold O., editor. PROCEEDINGS OF THE SNOW AND ICE IN RELATION TO WILDLIFE AND RECREATION SYMPOSIUM / FEBRUARY 11-12, 1971 / MEMORIAL UNION, IOWA STATE UNIVERSITY, AMES. *Iowa Coop. Wildl. Res. Unit.* iv + 280 p. 1971. Available at $7.00 from Iowa Cooperative Wildlife Research Unit, Science Hall, Iowa State University, Ames, Iowa. *WR 143: 2*

Many of the 23 papers are of special interest to wildlifers: *Snow, winter distribution, and population dynamics of mule deer in the central Rocky Mountains*, Olof C. Wallmo and R. Bruce Gill; *Influence of winter weather on white-tailed deer in Upper Michigan*, Louis J. Verme and John J. Ozoga; *A numerical index of winter conditions of use in big game management*, H. D. Picton and R. R. Knight; *Moose-snow relationships in northeastern Minnesota*, James M. Peek; *Muskox and snow cover on Nunivak Island, Alaska*, Peter C. Lent and Dennis Knutson; *Snow as a factor influencing bison distribution and numbers in Pelican Valley, Yellowstone National Park*, Mary Meagher; *Studies of the physical adaption of big game for snow*, John P. Kelsall and E. S. Telfer; *The distribution of energy in relation to snow cover in wildlife habitat*, Aaron N. Moen and Keith E. Evans; *Recreational uses of snow and ice in Michigan and some of its effects on wildlife and people*, Joel Young and Arlow Boyce; *Cold temperatures, snow and ice as reproductive inhibitors in cottontail rabbits*, Kenneth C. Sadler and Clinton H. Conaway; *Bobwhite quail population responses--losses and recovery--to excessive snowfall and low temperatures*, Jack A. Stanford; *Effects of snow and wind on wintering populations of white-tailed ptarmigan in Colorado*, Clait E. Braun and Raymond K. Schmidt, Jr.; *Effect of spring storm on waterfowl mortality and breeding activity*, Charles W. Dane and Gary L. Pearson; and *Effects of some Iowa winters on pheasants*, Eugene D. Klonglan.

SOILS

Brubacher, John I., and others. SOIL SURVEY OF PHILLIPS COUNTY, COLORADO. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 53 p., 16 figs. + single-fold maps based on aerial photos and bound in. June 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 2*

Carter, J. B., and others. SOIL SURVEY OF ORANGE COUNTY, VIRGINIA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 169 p., 7 figs. + single-fold maps based on aerial photos and bound in. May 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 2*

SOILS--Continued

Chamberlin, Earl, and others. SOIL SURVEY OF BENNETT COUNTY, SOUTH DAKOTA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 77 p., 21 figs. + single-fold maps based on aerial photos and bound in. May 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Cotton, James A., and others. SOIL SURVEY OF GREENE COUNTY, ALABAMA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 94 p., 19 figs. + single-fold maps based on aerial photos and bound in. June 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Gilbert, Frederick L., and others. SOIL SURVEY OF DENT COUNTY, MISSOURI. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 68 p., 12 figs. + single-fold maps based on aerial photos and bound in. Mar. 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Grice, Darrell G., and others. SOIL SURVEY OF MERCER COUNTY, PENNSYLVANIA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 73 p., 10 figs. + single-fold maps based on aerial photos and bound in. Apr. 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Jones, R. G., and others. SOIL SURVEY OF KEOKUK COUNTY, IOWA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 105 p., 13 figs. + single-fold maps based on aerial photos and bound in. May 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Langan, L. N., and others. SOIL SURVEY OF CARSON VALLEY AREA, NEVADA-CALIFORNIA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 129 p., 1 fig. + single-fold maps based on aerial photos and bound in. July 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Lewis, Royce R., and others. SOIL SURVEY OF STEVENS COUNTY, MINNESOTA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 86 p., 11 figs. + single-fold maps based on aerial photos and bound in. June 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Matthews, Earle D., and others. SOIL SURVEY OF CALVERT COUNTY, MARYLAND. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 76 p., 7 figs. + single-fold maps based on aerial photos and bound in. July 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Parker, John L., and others. SOIL SURVEY OF POWDER RIVER AREA, MONTANA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 99 p., 7 figs. + single-fold maps based on aerial photos and bound in. June 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Radeke, Robert E., and others. SOIL SURVEY OF SHANNON COUNTY, SOUTH DAKOTA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 84 p., 12 figs. + single-fold maps based on aerial photos and bound in. Apr. 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

Shingleton, Lyle C. SOIL SURVEY OF PITTSBURG COUNTY, OKLAHOMA. *U.S. Dep. Agr. Soil Conserv. Serv. Soil Surv.* i + 59 p., 20 figs. + single-fold maps based on aerial photos and bound in. May 1971. For sale by Supt. Documents, GPO, Washington, D.C. *WR 143: 3*

CONSERVATION EDUCATION

Marckworth, Gordon D. STATISTICS FROM SCHOOLS OF FORESTRY FOR 1970 / DEGREES GRANTED AND ENROLLMENTS. *J. Forest.* 69(8): 503. Aug. 1971. *WR 143: 3*
[Univ. Wash., Seattle.] During the calendar year 1970 the 52 schools of forestry awarded an estimated 2,771 undergraduate degrees, 513 Master degrees,

and 154 Doctoral degrees. General forestry accounted for 55% of the undergraduate degrees and 41% of the Master degrees while wildlife management ranked second with 19% of the undergraduate and 18% of the Master degrees. Only one of the ten tables appears in this article. Complete copies of the report are available upon request from the Society of American Foresters, 1010 - 16th St., N.W., Washington, D.C. 20036.

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Banks, Richard C. PUBLICATION DATES OF THE NORTH AMERICAN FAUNA SERIES. *Auk* 88(3): 676. July 1971. *WR 143: 4*
[Nat. Mus. Natur. Hist., Washington, D.C.] Dates are given to correct inaccurate dates printed on the covers of the issues of the series dealing with ornithology.—Courtesy/ Paul A. Stewart.

Howard, Hildegarde. IN MEMORIAM: LOYE HOLMES MILLER. *Auk* 88(2): 276-285, 1 pl. Apr. 1971. *WR 143: 4*
[Los Angeles County Mus. Natur. Hist., Los Angeles, Calif.] A memorial to the long-time former Chairman of the Biology Department of the University of California at Los Angeles. Includes a partial list of his ornithological publications for the period 1904-1968.—Courtesy/ Paul A. Stewart.

WILDLIFE—BIOTAS, ECOLOGY, NATURAL HISTORY

Almaca, Carlos. A PECULIARIDADA DA FAUNA IBÉRICA (VERTEBRADOS TERRESTRES). [PECULIARITY OF IBERIAN FAUNA (TERRESTRIAL VERTEBRATES).] *Rev. Fac. Cienc. Univ. Lisboa Ser. C Cienc. Natur.* 15(2): 209-227, illus. 1968. [From Biol. Abstr. 52 (16), 1971. In Portuguese with French summ.] *WR 143: 4*

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Chiji, Manzo, Gemma C. Araneta, Romualdo E. Alagar, Hermes G. Gutierrez, Isamu Hiura, Silvio M. Lopez, Yorio Miyatake, and Ko Seto. NATURAL HISTORY SURVEY OF THE PHILIPPINES BY THE OSAKA MUSEUM OF NATURAL HISTORY IN CO-OPERATION WITH THE NATIONAL MUSEUM OF THE PHILIPPINES, 1969. *Bull. Osaka Mus. Natur. Hist.* 23. p. 25-34, illus. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 4*
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Clapp, Roger B., and Fred C. Sibley. THE VASCULAR FLORA AND TERRESTRIAL VERTEBRATES OF VOSTOK ISLAND, SOUTH-CENTRAL PACIFIC. *Atoll Res. Bull.* 137-148. p. 1-10, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 4*
[Smithsonian Inst., Washington, D.C.]

Dennis, John V. SPECIES USING RED-COCKADED WOODPECKER HOLES IN NORTHEASTERN SOUTH CAROLINA. *Bird-Banding* 42(2): 79-87. Apr. 1971. *WR 143: 4*
[Box 389, Leesburg, Va.] Of 69 cavities constructed by red-cockaded woodpeckers *(Dendrocopus borealis)*, 17.4% were used by this species. One-fourth of the cavities were occupied by flying squirrels *(Glaucomys volans)*. In a sample of 362 cavities constructed by red-cockaded woodpeckers 73.5% faced in a westerly direction. Diggings exuding resin in the bark around their nesting cavities appeared to be an adaptation by red-cockaded woodpeckers preventing entrance of snakes into the nest cavities.—Courtesy/ Paul A. Stewart.

Eisentraut, Martin. EISZEITKLIMA UND HEUTIGE TIERVERBREITUNG IM TROPISCHEN WESTAFRIKA. [ICE AGE CLIMATE AND PRESENT DAY ANIMAL DISTRIBUTION IN TROPICAL WEST AFRICA.] *Umschau Wiss. Tec.* 70(3): 70-75. 29 Jan. 1970. [From J. Mammal. 51(3, suppl.), 1970. In German.] *WR 143: 4*

Harris, Lawrence Dean. SOME STRUCTURAL AND FUNCTIONAL ATTRIBUTES OF A SEMI-ARID EAST AFRICAN ECOSYSTEM. *Ph.D. thesis, Mich. State Univ.* 223 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 5*
Studies of climate, soils, vegetation and wild animals on the Mkomazi Game Reserve in northeastern Tanzania during 1964-67.

Kovach, Joseph K. ETHOLOGY IN THE SOVIET UNION. *Behaviour* 39(2-4): 237-265. 1971. In English with French and German summ. *WR 143: 5*
[Menninger Foundation, Topeka, Kans.] Summary: The relationship between the fields of Soviet ecological physiology and Western ethology is examined in the light of their common origin in evolutionary thought. The following topics are discussed: (i) Dialectical materialism and the study of behavioral evolution; (ii) Relationships and conceptual disagreements between Soviet ecological physiology and Western ethology; and, (iii) The study of instinct within the conceptual framework of Soviet ecological physiology.

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[238 West Royal Pkwy., Williamsville, N.Y.] Brief description and history of Allenberg Bog.

Schnurre, Otto. STREIFLICHTER AUS EINEM BERLINER NATURSCHUTZGEBIET ("FAULER SEE" HOHENSCHOENHAUSEN). [SIDELIGHTS FROM A NATURE PRESERVE IN THE AREA OF BERLIN (FAULE SEE IN HOHENSCHOENHAUSEN).] *Milu* 2(5): 453-457, illus. 1969. [From Biol. Abstr. 52(18), 1971. In German.] *WR 143: 5*

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[Slimbridge, Gloucester, England.]

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[Max-Planck-Inst. Verhaltensphysiol., Erling-Andechs, Germany.]

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WILDLIFE--POLLUTION

Creger, C. R., and L. F. Kubena. LIPOTHOPIC AGENTS AND DDT RESIDUE IN BIRDS AND EGGS. *Bull. Environ. Contam. & Toxicol.* 6(5): 453-459. Sept.-Oct. 1971. *WR 143: 6*

[Tex. A&M Univ., College Station.] Summary: Dietary supplementation of lipotropic agents, choline chloride and inositol resulted in a significant decrease in the total carcass residue of DDT and metabolites; and the residue of DDT and metabolites observed in the egg yolk was a direct reflection of the DDT present in the carcass. Choline chloride and inositol supplementation at levels of 2.65 or 1.32 and 2.0 or 1.0 gm per kg of diet, respectively, caused a more rapid depletion of DDT and metabolites; but, this increased elimination rate was not due to elimination in the egg yolk.

French, M. C., and D. J. Jefferies. THE PRESERVATION OF BIOLOGICAL TISSUE FOR ORGANOCHLORINE INSECTICIDE ANALYSIS. *Bull. Environ. Contam. & Toxicol.* 6 (5): 460-463. 1971. *WR 143: 6*

[Monks Wood Exp. Sta., Abbots Ripton, Huntingdonshire, England.] "On balance, this laboratory has decided to use a 4% solution of formaldehyde for the preservation of tissue from field experiments or for the transport of specimens by air or sea freight when the time delay precludes the use of dry ice. Although almost as good, phenol was rejected on account of possible column difficulties and weight changes."

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Santolucito, J. A., and E. Whitcomb. MECHANICAL RESPONSE OF SKELETAL MUSCLE FOLLOWING ORAL ADMINISTRATION OF PESTICIDES. *Toxicol. & Appl. Pharmacol.* 20(1): 66-72, 1 fig. Sept. 1971. *WR 143: 6*

[Perrine Primate Res. Branch, P.O. Box 490, Perrine, Fla.] DDT treatment resulted in statistically significant reductions in tension of both the single twitch and complete tetanus contractions. Carbaryl increased the tensions developed during complete tetanus and decreased the time constant of tension development. Neither parathion nor chlordane altered any of the response characteristics at the doses tested. It is concluded that skeletal muscle mechanical behavior provides important criteria for the evaluation of effects and mechanisms of action of pesticides in intact animals.--From abstr.

Shevchenko, L. S. [EFFECT OF DICHLORODIPHENYL TRICHLOROETHANE (DDT) AND DIMETHYL-2, 2, 2-TRI CHLOROXYETHYLPHOSPHATE ON GENERATIVE FUNCTION OF *LEPUS EUROPAEUS* PALLAS, 1778.] *Vestn. Zool.* 6: 26-31. 1969. [From J. Mammal. 51(3, suppl.), 1970. In Russian with English summ.] *WR 143: 6*

Tucker, Richard K., and M. A. Haegele. COMPARATIVE ACUTE ORAL TOXICITY OF PESTICIDES TO SIX SPECIES OF BIRDS. *Toxicol. & Appl. Pharmacol.* 20(1): 57-65, 1 fig. Sept. 1971. *WR 143: 7*

[Denver Wildl. Res. Center, Denver, Colo.] Abstract: Acute oral LD50 values were determined for 16 common pesticides on mallard ducks *(Anas platyrhynchos)*, ring-necked pheasants *(Phasianus colchicus)*, chukar partridges *(Alectoris graeca)*, coturnix quail *(Coturnix coturnix japonica)*, common pigeons *(Columba livia)*, and house sparrows *(Passer domesticus)*. Analyses of the data revealed that (1) the average sensitivity of any one species to the 16 pesticides did not differ statistically from that of any other species, and (2) at the same time, the species varied widely in their sensitivity to any given compound. The average range of the LD50 values for single chemicals in the 6 species was nearly 10-fold. With differences of this magnitude, it is recommended that extrapolation of toxicity data from one species to another be avoided.

Wassermann, M., Dora Wassermann, E. Kedar, and M. Djavaherian. IMMUNOLOGICAL AND DETOXICATION INTERACTION IN p,p-DDT FED RABBITS. *Bull. Environ. Contam. & Toxicol.* 6(5): 426-435, 3 figs. Sept.-Oct. 1971. *WR 143: 7*

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WILDLIFE--PARASITES & DISEASES

Peisakhis, L. A., I. I. Stogov, and V. M. Stepanov. [BIRDS AS A POSSIBLE SOURCE OF RODENT'S INFECTION WITH THE PLAGUE CAUSATIVE AGENT.] *Zool. Zh.* 48(9): 1374-1378. Sept. 1969. [From J. Mammal. 51(2, suppl.), 1970. In Russian with English summ.] *WR 143: 7*

Prudhoe, Stephen. CESTODES FROM FISH, BIRDS AND WHALES. *B.A.N.Z. Antarctic Res. Expedition* (Adelaide) *Rep. Ser. B* 8(9): 171-193. Nov. 1969. [From J. Mammal. 51(3, suppl.), 1970.] *WR 143: 7*

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[Bernhard Nocht-Inst. Schiffs-Tropenkr., Hamburg, Germany.]

WILDLIFE--OTHER MORTALITY FACTORS

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Ryszkowski, Lech, C. Kenyon Wagner, Jacek Goszczynski, and Janusz Truszkowski. OPERATION OF PREDATORS IN A FOREST AND CULTIVATED FIELDS. *Ann. Zool. Fenn.* 8(1): 160-168, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 7*

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WILDLIFE--POPULATIONS & FLUCTUATIONS

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A mathematical model for dynamic (time varying) processes of ecosystems is developed specifically for computer simulation, and a FORTRAN IV program is presented.

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A mathematical analysis is given of the dynamics of locomotor motion showing that with a decrease in the size of an animal, conditions are created making possible an increase in the frequency of movements of the extremities and the heart. An increase in the frequency of movements leads to an increase in the relative power of the muscles, that is, the amount of work carried out per unit time per unit of muscle mass. This increase is inversely proportional to the linear size of the animal and is of a purely mechanical nature; it is in no way a special property of living matter as previously thought.

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[Univ. Stockholm, Stockholm, Sweden.]

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MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

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[Univ. Calif., Los Angeles.] *Eutamias dorsalis* excludes *E. umbrinus* from the sparse pinon-juniper forests at lower elevations, and *E. umbrinus* excludes *E. dorsalis* from the denser forests at higher altitudes. The two species occur together only in a narrow strip of intermediate habitat. *E. dorsalis*, the more aggressive and more terrestrial species, chases *E. umbrinus* from areas where the trees are so widely spaced that *E. umbrinus* must flee on the ground. The advantage immediately shifts to the more social and arboreal *umbrinus* when the trees are sufficiently large and dense that their branches interlock.--From abstr. Courtesy/ Paul A. Stewart.

Carl, Ernest A. POPULATION CONTROL IN ARCTIC GROUND SQUIRRELS. *Ecology* 52 (3): 395-413, 6 figs. Late Spring 1971. *MR 143: 34*
[Univ. N.C., Chapel Hill.] Abstract: Unlike most tundra rodents, the arctic ground squirrel, *Spermophilus undulatus*, maintains a relatively constant population. The squirrels exist in two types of groupings: (1) breeding colonies, which cannot expand because their members are territorial, the females reacting to the availability of burrow sites (an environmental constant), and (2) refugee populations, which cannot expand because they cannot breed and, living in habitat only periodically suitable for squirrels, are killed off twice each year. The breeding populations have two distinct types of territories: breeding territories from May to August and prehibernation territories from August to November. During each episode, surplus animals are driven from the colonies and enter the refugee populations, where they are subjected to heavy predation by foxes and bears.--Courtesy/ Paul A. Stewart.

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[Scripps Inst. Oceanogr., La Jolla, Calif.] Abstract: *Eutamias alpinus, E. speciosus, E. amoenus,* and *E. minimus* are contiguously allopatric on the eastern slope of the Sierra Nevada, California. This paper is part of a study of the factors determining the lines of contact between these contiguously allopatric populations. Overlapping fundamental niches and nonoverlapping realized niches indicate that competitive exclusion has occurred. Patterns of intra- and interspecific aggression are described for these four species. The aggressive dominance of *alpinus* and *amoenus* explain the limited realized niches of *speciosus* and *minimus*. Hypotheses regarding the evolution of the patterns of aggressive behavior observed in these species are suggested. Aggression has been selected for in *alpinus* and *amoenus* because of a seasonal, potentially limiting food supply which is economically defendable. Aggression has not been selected for in *minimus* because it is not metabolically feasible to engage in aggressive interactions in the hot sagebrush desert. Aggressive behavior has not been selected for in *speciosus* probably because of predator pressure and the seasonal abundance of food in its habitat.--Courtesy/ Paul A. Stewart.

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[Scripps Inst. Oceanogr., La Jolla, Calif.] The climate space of an animal is described by all combinations of absorbed radiation, ambient temperature, and wind velocity which a species can tolerate and remain in neutral energy balance. The climate space for each species is constructed by putting realistic mutually compatible limiting values for body temperature, metabolic rate, evaporative water loss, and coefficient of convection into the energy budget equation. The equation is solved for the combinations of radiation absorbed, ambient temperature, and wind velocity which balance the equation. The upper limits of the climate space of *Eutamias speciosus* are lower than the upper limits of *E. alpinus, E. amoenus,* and *E. minimus*.--From abstr. Courtesy/ Paul A. Stewart.

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[Occidental Coll., Los Angeles, Calif.] Body weights and linear measurements of *Spermophilus beldingi beldingi*. Growth rates of *Spermophilus* species are compared and "in summary, hibernators attain more quickly key developmental stages and grow more rapidly than nonhibernators. This accelerated ontogeny is probably adaptive in that it aids in attaining the behavioral maturity, size, and energy reserves necessary for survival during hibernation."

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[Univ. Saskatchewan, Regina, Saskatchewan, Canada.] *Eutamius amoenus luteiventris* is larger than *E. minimus oreocetes* and usually has larger litters, earlier maturity, and higher population densities. The two species use similar food, but the food consumption of individual *minimus* is less than that of *amoenus*. The highly developed aggressive behavior of *E. amoenus* enables it to exclude *E. minimus* from subalpine habitats, but the latter survives in alpine situations where its small size is an adaptation to a reduced food supply.--From abstr. Courtesy/ Paul A. Stewart.

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[262 Spout Spring Ave., Mt. Holly, N.Y.] Abstract: Sounds of captive and free-living fox squirrels were observed and recorded from April 1967 through May 1968. A bark was the most common sound, usually in series of from six to 10. The barks decreased in duration and intensity while the interval between barks increased. Chatter barks were emitted when squirrels were suddenly startled. Restlessness and mild stress were indicated by broad-band tooth chatters and breathy barks of low intensity. Low frequency groans lasting up to 0.37 seconds were emitted by restrained squirrels. Multi-overtone grunts and longer squeals were emitted by squirrels during chases between males and when restrained. A two-syllable scream with overtones of 32 kilohertz was emitted by distressed squirrels. I was unable to record a high-pitched whine emitted during what appeared to be mating chases.

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Hawthorne, Vernon M. COYOTE MOVEMENTS IN SAGEHEN CREEK BASIN, NORTHEASTERN CALIFORNIA. *Calif. Fish & Game* 57(3): 154-161, 1 fig. July 1971. *WR 143: 40*
[Univ. Calif., Sagehen Creek Field Sta., Box 938, Truckee.] Abstract: A 4-year investigation, 1966 through 1969, of coyote *(Canis latrans)* movements was conducted in the Sagehen Creek area of northeastern California. Trapping was from mid-July to late September. A total of 101 coyotes were trapped, sexed, weighed, and measured. Of 98 which were ear tagged and released there were 26 adult males, 26 adult females, 28 juvenile males, and 18 juvenile females. Recapture or tag return data were from 35 individuals. Coyotes tagged as juveniles accounted for 80% of all recaptures and 46.7% of tag returns. Twenty-six (74.3%) of the recaptures or recoveries occurred within 1 year after release. The average movement recorded for adults was 4 miles for males, 4.75 miles for females, and the juvenile males and females averaged 3.25 and 4 miles, respectively. The longest movement was 87 miles recorded for a juvenile male. This animal was considered a drifter and was not used in the calculations. The weights of 101 adult coyotes ranged from 18 to 27.5 lb. for males (average = 24.25 lb.), and 17 to 26.5 lb. for females (average = 21.5 lb.).

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[Univ. Minn., Duluth.] Minnesota researchers, attempting to separate objective data about timber wolves from emotional attitudes, are compiling information gathered over a period of several years in the state's north woods. Findings suggest that laws to protect and preserve this animal may be as necessary as programs to control predations on deer or domestic livestock.

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[Game, Fish & Parks Div. Dep. Natur. Resour., P.O. Box 567, Fort Collins, Colo.] Abstract: A sexual differentiation in fat levels was established for pronghorns *(Antilocapra americana)* collected in Colorado. Females maintained higher fat levels through most of the year, and their mean fat levels reached a minimum later in the spring than did the mean fat levels for males. Fat storage was minimal in males until after the breeding season. Both sexes reached maximum fat levels during November and December. Significant fluctuations occurred in year-long trends established for the kidney fat index, visceral fat index, and depth of thoracic fat. Through the year the fat content of bone marrow remained at a high level, whereas depth of rump fat remained minimal.

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[Christian-Albrechts-Univ., Kiel, Germany.]

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Nellemann, George. CARIBOU HUNTING IN WEST GREENLAND. *Folk* (Copenhagen) 11-12: 133-153. 1969-1970. [From J. Mammal. 52(2, suppl.), 1971.] *WR 143: 45*

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O'Gara, Bart W., Randall F. Moy, and George D. Bear. THE ANNUAL TESTICULAR CYCLE AND HORN CASTING IN THE PRONGHORN *(ANTILOCAPRA AMERICANA)*. *J. Mammal.* 52 (3): 537-544, 12 figs. Aug. 1971. *WR 143: 45*

[Mont. Coop. Wildl. Res. Unit, Missoula.] Abstract: Investigation of 55 pairs of testes from adult and yearling pronghorns *(Antilocapra americana)* indicated that diameter of interstitial cells and their nuclei, degree of spermatogenesis, and weight of testes were at an annual low during January and February. Testicular weight increased 2.5 fold by August. In April the epididymides were packed with spermatozoa and the interstitial cells reached maximal diameters. The epididymides remained full of spermatozoa until December, but the interstitial cells regressed from April to January. The testes of a 3-month-old fawn were infantile; the seminiferous tubules were without patent lumena and no stereocilia were present in the epididymides. A 5-month-old fawn had testes at the prepubertal stage; the lumena of the seminiferous tubules were patent and stereocilia were present in the epididymides. Hardening of new horny tissue began in September about the time testicular development was at its height. The horns were cast about 2 months after the rut while the testes were declining in weight.

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Parker, G. R. TRENDS IN THE POPULATION OF BARREN-GROUND CARIBOU OF MAINLAND CANADA OVER THE LAST TWO DECADES: A RE-EVALUATION OF THE EVIDENCE. *Canadian Wildl. Serv. Occas. Pap.* no. 10. 11 p., illus. 1971. In English with French abstr. *WR 143: 45*

Abstract: Aerial surveys by the Canadian Wildlife Service in 1967 and 1968 produced an estimate of 385,000 barren-ground caribou for the four major populations on mainland Canada. A direct comparison of this estimate to results of the 1955 aerial survey of the same populations suggests an increase of approximately 50% during the 12 years between surveys. Closer examination of both surveys, with standardization of treatment of raw data, shows that the final estimates from both aerial surveys are actually very similar and that a direct comparison of estimates is misleading. Contrary to a major increase, it appears the total number of barren-ground caribou in northern Canada changed only slightly during the period 1955 to 1967.

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"Capreolus capreolus and *Rupicapra rupicapra."*

Wardle, J., and J. Hayward. THE FORESTS AND SCRUBLANDS OF THE TARAMAKAU AND THE EFFECTS OF BROWSING BY DEER AND CHAMOIS. *Proc. New Zealand Ecol. Soc.* 17: 80-91. Aug. 1970. [From J. Mammal. 52(2, suppl.), 1971.] *WR 143: 46*

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"Cervus elaphus."

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Yahrov, I. I. [THE BEHAVIOR OF A MIDDLE-ASIAN GAZELLE IN DESERT IN CONNECTION WITH THE ANIMAL'S WATERING SITES.] *Trans. Moscow Soc. Natur.* 35: 53-56. 1969. [From J. Mammal. 51(2, suppl.), 1970. In Russian with English summ.] *WR 143: 46*

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DEER (Odocoileus)

Brunetti, Oscar, and Harold Cribbs. CALIFORNIA DEER DEATHS DUE TO MASSIVE INFESTATION BY THE LOUSE *(LINOGNATHUS AFRICANUS)*. *Calif. Fish & Game* 57(3): 162-166, 3 figs. July 1971. *WR 143: 47*

Abstract: In December 1967, 34 deer died on the Tejon Ranch in Kern County, California. A fawn was submitted to the Wildlife Investigations Laboratory to ascertain cause of death. No evidence of infectious disease was found. The animal's death was due to exsanguination anemia which resulted from infestation by tremendous numbers of the African blue louse *(Linognathus africanus*, Kellogg and Paine). Four other occurrences of this louse in different California deer herds have been found.

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BIRDS--GENERAL

Blagosklonov, K. N. [ON THE IMPORTANCE OF NEST ILLUMINATION TO CAVITY-NESTING BIRDS.] *Byull. Mosk. Obshchest. Ispyt. Prir. Otd. Biol.* 75(3): 45-47. 1970. [From Bird-Banding 42(2), 1971. In Russian with English summ.] *WR 143: 52*

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Ferensa, Bronisława, editor. KLUCZE DO OZNACZANIA KRĘGOWCÓW POLSKI. CZĘŚĆ IV B. PTAKI--AVES: PASSERIFORMES. [KEYS TO THE IDENTIFICATION OF THE VERTEBRATES OF POLAND. PART IV B. AVES: PASSERIFORMES.] *Państwowe Wydawnictwo Naukowe* (Warsaw). 249 p., illus. 1971. [From Biol. Abstr. 52(18), 1971. In Polish.] *WR 143: 52*
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[Kharkov State Univ., Kharkov, USSR.]

Vuilleumier, Francois. EVOLUTIONARY RELATIONSHIPS OF SOME SOUTH AMERICAN GROUND TYRANTS: CHAPTER I. GENERIC RELATIONSHIPS AND SPECIATION PATTERNS OF *OCHTHOECA, MYIOTHERETES, XOLMIS, NEOXOLMIS, AGRIORNIS,* AND *MUSCISAXICOLA*. *Bull. Mus. Comp. Zool.* 14(5): 181-232, illus. 1971. [From Biol. Abstr. 52(18), 1971.] *WR 143: 53*

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BIRDS--TECHNIQUES

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[Univ. Malaya, Kuala Lumpur, Malaysia.] A comparison between a number of indices of similarity for describing multiple species samples, namely K, I, (1-z), $(X^2/N)^{1/2}$, and a weighted similarity coefficient under various transformations.

Dhondt, André A., and E. J. van Outryve. A SIMPLE METHOD FOR TRAPPING BREEDING ADULTS IN NESTING BOXES. *Bird-Banding* 42(2): 119-121, 1 fig. Apr. 1971. *WR 143: 53*

[Ghent State Univ., Ledeganckstraat 35, 9000-Ghent, Belgium.] A battery-operated trapdoor is activated by the bander from a distance of 50 m.--Courtesy/ Paul A. Stewart.

Dobrinskii, L. N. [AN ATTEMPT OF COLORIMETRIC ESTIMATION OF COLOR IN POLYMORPHIC SPECIES OF BIRDS.] *Zool. Zh.* 49(10): 1543-1547, illus. 1970. [From Biol. Abstr. 52(14), 1971. In Russian with English summ.] *WR 143: 53*

[Inst. Plant Anim. Ecol., Ural Br., Acad. Sci. USSR, Sverdlovsk, USSR.]

Emlen, John T. POPULATION DENSITIES OF BIRDS DERIVED FROM TRANSECT COUNTS. *Auk* 88(2): 323-342, 3 figs. Apr. 1971. *WR 143: 53*

[Univ. Wis., Madison.] Summary: Census methods for nonflocking land birds are reviewed and a new method is described that is applicable at all seasons, is more efficient than the intensive plot methods, and is apparently comparable in accuracy. In the new method foot transect counts are made in which all detections, visual and aural, out to the limit of detectability are tallied. The count for each species is then multiplied by a conversion factor (coefficient of detectability) representing the per cent of the population that is normally detected by these procedures. Conversion values are derived directly from distribution curves of detection points laterally from the observer's trail. Conversion values are finally adjusted for incompleteness in the strip of optimum coverage close to the transect trail. Field procedures used in testing the new method are described and samples of preliminary results are presented and evaluated.--Courtesy/ Paul A. Stewart.

Johnson, James C. RUBY-THROATED HUMMINGBIRD STUDIES. PART III: PROCEDURES FOR TRAPPING AND BANDING HUMMINGBIRDS. *Inland Bird Banding News* 42(5): 163-169, illus. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 53*

[Table Rock Heights, Hollister, Mo.]

Johnson, Steve R. A COLORED LEG TAG FOR NESTLING AND ADULT BIRDS. *Bird-Banding* 42(2): 129-131, 1 fig. Apr. 1971. *WR 143: 53*

[Univ. Alaska, College.] Scotch tape was placed around the tarsi of starlings *(Sturnus vulgaris)* and crested mynas *(S. cristatellus)*.--Courtesy/ Paul A. Stewart.

Korolev, V. K., and A. M. Bolotnikov. [A RECORDER FOR TEMPERATURE AND MOISTURE IN BIRDS' NESTS.] *Uch. Zap. Perm. Gos. Pedagog. Inst.* 69: 39-42. 1969. [From Biol. Abstr. 52(13), 1971, from Referat. Zh., Biol., 1970, no. 71359. Transl. of Russian abstr.] *WR 143: 53*

A description is given of the AN-3 recorder, which is used for recording temperatures and moisture in birds' nests.

Risser, Arthur C., Jr. A TECHNIQUE FOR PERFORMING LAPAROTOMY ON SMALL BIRDS. *Condor* 73(3): 376-379, 1 fig. Autumn 1971. *WR 143: 54*
[Univ. Nev., Reno.]

Shallenberger, Robert. A DEVICE FOR HANDLING SHEARWATERS. *Bird-Banding* 42 (2): 125-127, 1 fig. Apr. 1971. *WR 143: 54*
[Oceanic Inst., Waimanalo, Oahu, Hawaii.] A one-quart plastic Clorox bottle was trimmed to slip over the birds' heads to hold their wings against their bodies.--Courtesy/ Paul A. Stewart.

Southern, William E. EVALUATION OF A PLASTIC WING-MARKER FOR GULL STUDIES. *Bird-Banding* 42(2): 88-91, 1 fig. Apr. 1971. *WR 143: 54*
[N. Ill. Univ., DeKalb.] The markers were carried for as long as three years, seemingly without interfering with migration or breeding activities.--Courtesy/ Paul A. Stewart.

Stewart, Paul A. AN AUTOMATIC TRAP FOR USE ON BIRD NESTING BOXES. *Bird-Banding* 42(2): 121-122, 1 fig. Apr. 1971. *WR 143: 54*
[USDA, Entomol. Res. Div., Oxford, N.C.] The drop door is released by the bird alighting on a treadle after it has entered the nesting box.

BIRDS--MORPHOLOGY & PHYSIOLOGY

Berger, M., J. S. Hart, and O. Z. Roy. RESPIRATION, OXYGEN CONSUMPTION AND HEART RATE IN SOME BIRDS DURING REST AND FLIGHT. *Z. Vergl. Physiol.* 66: 201-214. 1970. [From Bird-Banding 42(2), 1971.] *WR 143: 54*
"Hesperiphona vespertina, Larus delawarensis, and *Anas rubripes."*

Berthold, Peter. UEBER POPULATIONSUNTERSCHIEDE IM GONADENZYKLUS EUROPAEISCHER *STURNUS VULGARIS, FRINGILLA COELEBS, ERITHACUS RUBECULA* UND *PHYLLOSCOPUS COLLYBITA* UND DEREN URSACHEN. [ON POPULATION DIFFERENCES IN THE GONADAL CYCLES OF EUROPEAN *STURNUS VULGARIS, FRINGILLA COELEBS, ERITHACUS RUBECULA* AND *PHYLLOSCOPUS COLLYBITA* AND THEIR CAUSES.] *Zool. Jahrb. Abt. Syst. Oekol. Geogr. Tiere* 96(4): 491-557, illus. 1969. [From Biol. Abstr. 52(17), 1971. In German with English summ.] *WR 143: 54*
[Max-Planck-Inst. Verhaltensphysiol., Vogelwarte Radolfzell, Germany.]

Bolotnikov, A., A. Shurakov, Yu. Kamenskii, and V. Koroleev. [CONDITIONS AND NATURE OF AVIAN EMBRYO DEVELOPMENT DURING EGG DEPOSITION.] *Ekologiya* 1(4): 40-46. 1970. [From Bird-Banding 42(2), 1971. In Russian.] *WR 143: 54*

Bullock, J. A. THE INVESTIGATION OF SAMPLES CONTAINING MANY SPECIES: I. SAMPLE DESCRIPTION. *Biol. J. Linnean Soc.* 3(1): 1-21, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 54*
[Univ. Malaya, Kuala Lumpur, Malaysia.] Log-series is the most satisfactory for Malayan birds.

Herman, Ewa, and Roman Holynski. OBECNY STAN BADAN NAD CYTOGENTYKA PTAKOW: II. EWOLUCJA CHROMOSOWA. [PRESENT STATE OF CYTOGENETIC STUDIES IN BIRDS. II. CHROMOSOMAL EVOLUTION.] *Przegl. Zool.* 14(2): 159-172, illus. 1970. [From Biol. Abstr. 52(17), 1971. In Polish with English summ.] *WR 143: 54*
[Warsaw, Poland.]

Kennedy, R. J. PREEN GLAND WEIGHTS. *Ibis* 113(3): 369-372, 3 figs. 1971. *WR 143: 54*
[Univ. Newcastle-upon-Tyne, Newcastle-upon-Tyne, England.] Data gathered from 171 individuals of 52 spp.

Ohmart, Robert D., and E. Linwood Smith. WATER DEPRIVATION AND USE OF SODIUM CHLORIDE SOLUTIONS BY VESPER SPARROWS *(POOECETES GRAMINEUS). Condor* 73(3): 364-366, 1 fig. Autumn 1971. *WR 143: 54*
[Ariz. State Univ., Tempe.]

Pan, H. Ping. LITERATURE SURVEY ON GENERAL AND COMPARATIVE ENZYME BIOCHEMISTRY OF BIRDS. *U.S. Fish Wildl. Serv., Spec. Sci. Rep. Wildl.* no. 143. iv + 70 p. 1971. For sale at 70¢ by Supt. Documents, GPO, Washington, D.C. *WR 143: 55*
[Patuxent Wildl. Res. Sta., Gainesville, Fla.] Abstract: Available information on the enzyme biochemistry of birds is presented. A literature search revealed that birds differ mainly from other animals in metabolism involving nitrogen elimination. Comparative differences in enzyme biochemistry of only a few species of birds are known. Very little work has been done in the field of comparative enzyme biochemistry of birds, and practically none on blackbirds.

Terent'ev, P. V. [CORRELATION OF STANDARD BIRD MEASUREMENTS.] *Byull. Mosk. Obshchest. Ispyt. Prir. Otd. Biol.* 75(6): 129-134, illus. 1970. [From Biol. Abstr. 52(14), 1971. In Russian with English summ.] *WR 143: 55*

BIRDS--BEHAVIOR

Anderson, Bertin W. MAN'S INFLUENCE ON HYBRIDIZATION IN TWO AVIAN SPECIES IN SOUTH DAKOTA. *Condor* 73(3): 342-347, 1 fig. Autumn 1971. *WR 143: 55*
[Northwestern State Coll., Alva, Okla.] Flicker and oriole habitat are increased by tree planting in South Dakota. At the same time much of their natural habitat is destroyed by the creation of reservoirs.--From summ.

Bolotnikov, A., Yu. Kamenskii, L. Afanaseva, and L. Yakonenko. [ORIENTATION AND SHIFTING OF EGGS IN NESTS AS FACTORS IN AVIAN EMBRYO DEVELOPMENT.] *Ekologiya* 1(5): 85-87. 1970. [From Bird-Banding 42(2), 1971. In Russian.] *WR 143: 55*

Courser, William D., and James J. Dinsmore. RED-TAILED HAWK PREYS ON CATTLE EGRET. *Auk* 88(3): 669-670. July 1971. *WR 143: 55*
[Univ. South Fla., Tampa.] A red-tailed hawk *(Buteo jamaicensis)* pursued a flock of flying cattle egrets *(Bubulcus ibis)* and captured one when in flight.--Courtesy/ Paul A. Stewart.

Dexter, Ralph W. SHIFT OF MATES DURING NESTING OF CHIMNEY SWIFTS. *Bird-Banding* 42(2): 125. Apr. 1971. *WR 143: 55*
[Kent State Univ., Kent, Ohio.] Courtesy/ Paul A. Stewart.

Gramet, P. CONTRIBUTION À L'ÉTUDE DU COMPORTEMENT PARENTAL CHEZ LES OISEAUX. [CONTRIBUTION TO THE STUDY OF PARENTAL BEHAVIOR IN BIRDS.] *Ann. Zool. Ecol. Anim.* 2(1): 97-120. 1970. [From Biol. Abstr. 52(14), 1971. In French.] *WR 143: 55*
[Inst. Nat. Rech. Agron., Jouy-en-Josas, France.]

Hald-Mortensen, Poul. NORDGRAENSEN FOR FUGLEARTER MED EN SYDLIG ELLER SYDSTLIG UDBREDELSE I FORHOLD TIL DANMARK. [NORTHERN DISTRIBUTION LIMIT FOR BIRDS WITH SOUTHERN OR SOUTHEASTERN DISTRIBUTION IN DENMARK.] *Flora Fauna* 76 (4): 135-140, illus. 1970. [From Biol. Abstr. 52(14), 1971. In Danish with English summ.] *WR 143: 55*
[Kobenhavns Univ., Copenhagen, Denmark.]

Harlow, Richard A., Jr. BIRDS FEEDING ON AN ANT MATING SWARM IN MAINE. *Wilson Bull.* 83(2): 201-202. June 1971. *WR 143: 55*
[Tabor Acad., Marion, Mass.] Includes observations of 6 spp. of birds.--Courtesy/ Paul A. Stewart.

Heppner, Frank H., and Donald S. Farner. TRAINING WHITE-CROWNED SPARROWS, *ZONOTRICHIA LEUCOPHRYS GAMBELII*, IN SELF-SELECTION OF PHOTOPERIOD. *Z. Tierpsychol.* 28(1): 62-68, illus. 1971. [From Biol. Abstr. 52(13), 1971. In English with German summ.] *WR 143: 55*
[Univ. R.I., Kingston.] *"Zonotrichia leucophrys gambelii."*

Kneutgen, Johannes. EIN KRANKER VOGEL GELANGT DURCH EIN MISSVERSTAENDNIS AN DIE SPITZE DER RANGORDNUNG. [A SICK BIRD REACHES THE TOP OF A RANK-ORDER THROUGH A MISUNDERSTANDING.] *Z. Tierpsychol.* 27(7): 840-841. 1970. [From Biol. Abstr. 52(15), 1971. In German with English summ.] *WR 143: 56*

[Kaldauer St. 100, Siegburg, Germany.] A chiff-chaff in a communal cage reached the top of the rank order because its cage-mates misinterpreted a body posture brought about by defective rearing. Its wings were permanently spread in a lowered position, and its truncated tail maintained upright, as in the aggressive posture.

Morse, Douglass H. THE FORAGING OF WARBLERS ISOLATED ON SMALL ISLANDS. *Ecology* 52(2): 216-228, 4 figs. Early Spring 1971. *WR 143: 56*

[Univ. Md., College Park.] When only one species of warbler was present it was always the parula *(Parula americana)*; when two species were present they were always the parula and myrtle *(Dendroica coronata)*. Black-throated green warblers *(D. virens)* occurred in association with the parula and myrtle. Species diversity increased as the size of the forest and proportion of foliage in tree crowns increased. Nesting was more successful among parula and myrtle warblers than among the black-throated greens. When black-throated green warblers were absent parula and myrtles changed their foraging behavior. Overlap in foraging decreased as species decreased.--Courtesy/ Paul A. Stewart.

Murray, Bertram G., Jr. THE ECOLOGICAL CONSEQUENCES OF INTERSPECIFIC TERRITORIAL BEHAVIOR IN BIRDS. *Ecology* 52(3): 414-423, 1 fig. Late Spring 1971. *WR 143: 56*

[Rutgers Univ., New Brunswick, N.J.] "The model proposed here for the origin of interspecific territoriality is similar to the model for interspecific hybridization. Interspecific hybridization occurs when two species are so similar in morphology, behavior, and habitat that the males and females of each species misdirect their reproductive behavior. In my model of interspecific territoriality two species are sufficiently similar in morphology, behavior, and habitat that the males misdirect their territorial behavior. The consequences of interspecific hybridization are known...but the consequences of interspecific territoriality seem not to have been as carefully considered."--Courtesy/ Paul A. Stewart.

Smith, W. John. EVOLUTIONARY RELATIONSHIPS OF SOME SOUTH AMERICAN GROUND TYRANTS: CHAPTER II. BEHAVIOR OF *MUSCISAXICOLA* AND RELATED GENERA. *Bull. Mus. Comp. Zool.* 14(5): 233-268, illus. 1971. [From Biol. Abstr. 52(18), 1971.] *WR 143: 56*

[Univ. Pa., Philadelphia.]

Vine, Ian. RISK OF VISUAL DETECTION AND PURSUIT BY A PREDATOR AND THE SELECTIVE ADVANTAGE OF FLOCKING BEHAVIOUR. *J. Theor. Biol.* 30(2): 405-422, illus. 1971. [From Biol. Abstr. 52(14), 1971.] *WR 143: 56*

[Univ. Bristol, Bristol, England.]

Wolf, Larry L. EVOLUTION OF PAIR COOPERATION IN A TROPICAL HUMMINGBIRD. *Evolution* 24(4): 772-773, illus. 1970. [From Biol. Abstr. 52(13), 1971.] *WR 143: 56*

[Syracuse Univ., Syracuse, N.Y.] *"Panterpe insignis."*

BIRDS--MIGRATION & BANDING REPORTS

Bellrose, Frank C. THE DISTRIBUTION OF NOCTURNAL MIGRANTS IN THE AIR SPACE. *Auk* 88(2): 397-424, 10 figs. Apr. 1971. *WR 143: 56*

[Ill. Natur. Hist. Surv., Urbana.] A small aircraft with added lights was used to count small birds migrating at night. About half of the birds were found flying at heights between 500 and 1,000 feet, and few were found above 5,000 feet. Altitudes of migrants increased from soon after the start of darkness until midnight, with a decline soon after midnight and a further decline before

dawn. More birds migrated when winds at departure favored them than when the winds blew the opposite direction to that they travelled, but there was no change in altitudinal distribution of the birds correlated with wind conditions. In the area of the Gulf of Mexico the highest density of birds occurred near land bridges across the Gulf. Airborne migrants appeared able to detect changes of wind direction. Birds appeared to fly in turbulent air in preference to smooth air.--From summ. Courtesy/ Paul A. Stewart.

Busse, P., and W. Kania. AKCJA BALTYCKA. METODY PRACY. [OPERATION BALTIC. WORKING METHODS.] *Acta Ornithol.* (Warsaw) 12(7): 231-267, 22 figs. 1970. [From Bird-Banding 42(2), 1971. In Polish with Russian and English summ.] *WR 143: 57*

Dupuy, A. DONNÉES SUR LES MIGRATIONS TRANSSAHARIENNES DU PRINTEMPS, 1966. [DATA ON THE TRANS-SAHARA MIGRATIONS IN THE SPRING OF 1966.] *Alauda* 38(4): 278-285, illus. 1970. [From Biol. Abstr. 52(13), 1971. In French.] *WR 143: 57*
[Conserv. Parc Nat., Senegal.] Maximum and minimum hours, types of species and stages of migration, including molting time, were observed. Biometrical data and the migration profile are given.

Gauthreaux, Sidney A., Jr. A RADAR AND DIRECT VISUAL STUDY OF PASSERINE SPRING MIGRATION IN SOUTHERN LOUISIANA. *Auk* 88(2): 343-365, 10 figs. Apr. 1971. *WR 143: 57*
[Clemson Univ., Clemson, S.C.] In early April 20,000-25,000 birds per mile of front arrived each day in coastal Louisiana from a trans-Gulf flight. By the end of April until early May as many as 50,000 birds per mile of front arrived. In southern Louisiana the flight continued for only a short time, but the migration from coastal Texas continued throughout most of night. Hard rains prevented initiation of northward flights. Passerine migrants started their flights during the period one half to one and a half hours after sunset. Large numbers of trans-Gulf migrants landed in the coastal woodlands and departures were delayed in association with strong cold fronts over the Gulf of Mexico.--Courtesy/ Paul A. Stewart.

Keve, A., and I. Sterbetz. TAXONOMIE IM DIENSTE DER VOGELZUGFORSCHUNG. [TAXONOMY USE IN RESEARCH ON THE MIGRATION OF BIRDS.] *Zool. Abh.* (Dresden) 31. p. 227-229. 1970. [From Biol. Abstr. 52(17), 1971. In German.] *WR 143: 57*
[Madártani Intéz., Budapest, Hungary.]

Patterson, Robert W., Mrs. WARBLER RETURNS AT SOMESVILLE, MAINE. *Bird-Banding* 42(2): 99-102. Apr. 1971. *WR 143: 57*
[Mount Desert, Me.] Thirty-nine returns were obtained from 3,709 banded warblers of various species. Of the 3,709, most (3,269) were captured in the fall and 440 in the spring. Twenty-seven of the returns were of birds banded in the spring and only 12 of those banded in the fall.--Courtesy/ Paul A. Stewart.

Stén, Ilkka. FINNISCHE WIEDERFUNDE IM AUSLAND BERINGTER VOEGEL. V. [FINDS OF BIRDS IN FINLAND WHICH WERE BANDED IN OTHER COUNTRIES. V.] *Mem. Soc. Fauna Flora Fenn.* 46: 60-79. 1970. [From Biol. Abstr. 52(14), 1971. In German.] *WR 143: 57*
[Eläinmus., Rengastustoimisto, Helsinki, Finland.] A total of 352 banded birds from 55 spp. (ducks not included) in Finland are listed. *Fringilla coelebs, Larus ridibundus, Sturnus vulgaris, Corvus corone cornix* and *Turdus merula* were the most frequent finds.

Tashliev, A. O. [THE BIRDS' FLIGHTS IN SOUTH-EAST TURKMENIA.] *Izv. Akad. Nauk Turkm. SSR Ser. Biol. Nauk* 6. p. 55-62. 1970. [From Biol. Abstr. 52(14), 1971. In Russian with English summ.] *WR 143: 57*
[Inst. Zool., Acad. Sci. Turkm. SSR, Ashkhabad, USSR.] Spring and fall migrations compared.

Ward, Peter. THE MIGRATION PATTERNS OF *QUELEA QUELEA* IN AFRICA. *Ibis* 113 (3): 275-279, 13 figs. 1971. *WR 143: 58*
[P.O. Box 3024, Arusha, Tanzania.] Red-billed queleas migrate away from rain. Some populations' migrations are predicted on the basis of general rainfall patterns. Females produce a succession of broods in the same season and practice "itinerant breeding."--From summ.

Yoshii, Masashi, Yoshitake Hasuo, and Noritaka Ichida. [EIGHTH ANNUAL REPORT ON THE BIRD RINGING FOR THE YEAR ENDING 31st MARCH, 1969.] *Misc. Rep. Yamashina's Inst. Ornithol.* 6(1/2): 32-53. 1970. [From Biol. Abstr. 52(18), 1971. In Japanese with English summ.] *WR 143: 58*
[Yamashina's Inst. Ornithol., Tokyo, Japan.]

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Ali, Salim, and S. Dillon Ripley. HANDBOOK OF THE BIRDS OF INDIA AND PAKISTAN TOGETHER WITH THOSE OF NEPAL, SIKKIM, BHUTAN, AND CEYLON, VOL. 4. FROGMOUTHS TO PITTAS. *Oxford Univ. Press* (London, England; New York, N.Y.).. xiii + 265 p., illus. 1970. Price $17.00. [From Biol. Abstr. 52(15), 1971.] *WR 143: 58*
Size, color, distribution, habits, breeding biology, diet, and voice of the six bird families of India and Pakistan.

Bouillot, Michel. NOTE SUR L'AVIFAUNE SPECIFIQUE DE CERTAINS BIOTOPES DE BASSE-ARDECHE. [REPORT ON THE SPECIFIC AVIFAUNA OF CERTAIN BIOTOPES OF THE LOWER ARDECHE REGION (FRANCE).] *Alauda* 38(3): 174-185. 1970. [From Biol. Abstr. 52(13), 1971. In French.] *WR 143: 58*
[Group Scolaire, 71-Autun, France.]

Carbyn, L. N. DENSITIES AND BIOMASS RELATIONSHIPS OF BIRDS NESTING IN BOREAL FOREST HABITATS. *Arctic* 24(1): 51-61. 1971. [From Biol. Abstr. 52(16), 1971. In English with French and Russian summ.] *WR 143: 58*
[Canadian Wildl. Serv., Edmonton, Alberta, Canada.]

duPont, John E. NOTES ON PHILIPPINE BIRDS (NO. 1). *Nemouria* (Occas. Pap. Del. Mus. Natur. Hist.) no. 3. 6 p. 20 July 1971. *WR 143: 58*
Five new subspecies are described.

Friedmann, Herbert, and John G. Williams. THE BIRDS OF THE LOWLANDS OF BWAMBA, TORO PROVINCE, UGANDA. *Los Angeles County Mus. Contrib. Sci.* 211. p. 1-70. 1971. [From Biol. Abstr. 52(17), 1971.] *WR 143: 58*
[Los Angeles County Mus. Natur. Hist., Los Angeles, Calif.] Two new species reported: *Himantornis haematopus* and *Glaucidium castaneum.*

Frith, H. J., editor. BIRDS IN THE AUSTRALIAN HIGH COUNTRY. *A. H. and A. W. Reed* (Artarmon, Sydney, Australia; Los Angeles, Calif.). 481 p., illus. 1969. [From Biol. Abstr. 52(14), 1971.] *WR 143: 58*

Fry, C. H. ECOLOGICAL DISTRIBUTION OF BIRDS IN NORTH-EASTERN MATO GROSSO STATE, BRAZIL. *An. Acad. Brasil Cienc.* 42(2): 275-318, illus. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 58*
[Marischal Coll., Univ., Aberdeen, Scotland.]

Fujimaki, Yuzo. [AN AVIFAUNAL STUDY IN DIFFERENT TYPES OF FORESTS IN THE CENTRAL PART OF HOKKAIDO, JAPAN.] *Bull. Hokkaido Forest Exp. Sta.* 8. p. 41-51, illus. 1970. [From Biol. Abstr. 52(17), 1971. In Japanese with English summ.] *WR 143: 58*
[Hokkaido Forest Exp. Sta., Bibai, Hokkaido, Japan.]

Green, R. H. BIRDS OF FLINDERS ISLAND. *Queen Victoria Mus.* (Launceston) *Rec.* 34: 1-32. 30 June 1969. [From J. Mammal. 51(2, suppl.), 1970.] *WR 143: 58*

Grossu, Alexandru, and Dimitrie Radu. OBSERVATII ECOLOGICE IN TIMPUL IERNII LA PĂSĂRI IN BUCURESTI. [ECOLOGICAL OBSERVATIONS ON THE BIRDS IN BUCHAREST IN WINTER.] *Comun. Zool.* 1970: 267-271. 1970. [From Biol. Abstr. 52(14), 1971. In Romanian.] *WR 143: 59*

Hald-Mortensen, Poul. A COLLECTION OF BIRDS FROM LIBERIA AND GUINEA (AVES). *Steenstrupia* 1(12): 115-125. 1970. [From Biol. Abstr. 52(19), 1971.] *WR 143: 59*
[Zool. Mus., Copenhagen, Denmark.]

Harvey, Bruce. A PORTFOLIO OF NEW ZEALAND BIRDS. *Charles E. Tuttle Co.* (Rutland, Vt.). 60 p., illus. 1970. Price $17.50. [From Biol. Abstr. 52 (18), 1971.] *WR 143: 59*

Hoelzinger, Jochen, Gerhard Knoetzsch, Burkhard Kroymann, and Karl Westermann. DIE VOEGEL BADENWUERRTEMBERTS--EINE UEBERSICHT. [THE BIRDS OF BAD-WUERTTEMBERG. A SURVEY.] *Anz. Ornithol. Ges. Bayern* 9(Spec. No.): 9-164. 1970. [From Biol. Abstr. 52(13), 1971. In German.] *WR 143: 59*
[Kuratorium Avifaun. Forsch., 79111 Oberelchingen, Germany.] Three hundred and thirty six spp. from 60 families and 19 orders are considered.

Johnson, R. Roy, and James M. Simpson. IMPORTANT BIRDS FROM BLUE POINT COTTONWOODS, MARICOPA COUNTY, ARIZONA. *Condor* 73(3): 379-380. Autumn 1971. *WR 143: 59*
[Prescott Coll., Prescott, Ariz.]

Karr, James R. STRUCTURE OF AVIAN COMMUNITIES IN SELECTED PANAMA AND ILLINOIS HABITATS. *Ecol. Monogr.* 41(3): 207-229, 3 figs. Summer 1971. *WR 143: 59*
[c/o Rodney J. Karr, R.D. #7, Echo Valley, Newark, Ohio.] To elucidate the causal factors responsible for diversity gradients in avian communities, avian populations were studied for 12 months in seven lowland tropical areas in the Republic of Panama and compared with populations in structurally similar habitats in Illinois. Resident (breeding) species made up 38-49% of the species on temperate areas but only 20-36% of the species in similar tropical habitats. There were significantly more species of irregular occurrence in mature tropical habitats. Tropical grassland avifaunas were no higher in diversity (number of species and information measures of diversity) than those of temperate grassland areas, but shrub and forest habitats in the tropics had higher diversity as measured by either diversity measure. The number of species was proportionately higher than the information measure because of the relatively small effect of the many rare species on the information measure. Determination of the biomass and energy relations for the bird populations showed that higher total population size in tropical areas is correlated with smaller bird size and reduced individual energy requirements. When only breeding seasons are compared, the reduced energy requirements are a result of the higher temperatures in tropical areas.--From abstr. Courtesy/ Paul A. Stewart.

Lawson, Walter J. A CHECK LIST OF THE BIRDS OF DURBAN. *S. African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol.* no. 73. 80 p. 1971. Price R2.00. *WR 143: 59*
Annotated list of 874 spp.

Maclean, G. L. AN ANALYSIS OF THE AVIFAUNA OF THE SOUTHERN KALAHARI GEMSBOK NATIONAL PARK. *Zool. Afr.* 5(2): 249-273, illus. 1970. [From Biol. Abstr. 52 (13), 1971.] *WR 143: 59*
[Univ. Natal, Natal, South Africa.]

Mocci, Demartis Attilio. CONTRIBUTO ALLA CONOSCENZA DI UCCELLI POCO NOTI IN SARDEGNA E RETTIFICA A PRECEDENTI DATA. [CONTRIBUTION TO THE KNOWLEDGE OF LITTLE KNOWN BIRDS OF SARDINIA AND CORRECTION OF OLDER INFORMATION.] *Riv. Ital. Ornitol.* 40(3/4): 433-440. 1970. [From Biol. Abstr. 52(19), 1971. In Italian.] *WR 143: 59*
[Univ. Cagliari, Cagliari, Italy.]

Moltoni, Edgardo, and Elio A. Di Carlo. GLI UCCELLI DELL'ISOLA D'ELBA (TOSCANA). [THE BIRDS OF THE ISLAND OF ELBA (TUSCAN ARCHIPELAGO).] *Riv. Ital. Ornitol.* 40(3/4): 285-388, illus. 1970. [From Biol. Abstr. 52(19), 1971. In Italian.] *WR 143: 60*

Ozawa, Keijiro. OBSERVATIONS OF BIRDS IN THE EAST CHINA SEA, APRIL 1968, "UMITAKA MARU". *Misc. Rep. Yamashina's Inst. Ornithol.* 6(1/2): 195-205, illus. 1970. [From Biol. Abstr. 52(18), 1971. In (English) with Japanese summ.] *WR 143: 60*

Papadopol, Aurel. DATE NOI CU PRIVIRE LA FAUNA DE PĂSĂRI DIN DOBROGEA SI DELTA DUNĂRII. [NEW DATA ON THE AVIFAUNA OF DOBROUDJA AND THE DANUBE DELTA.] *Comun. Zool.* 1970: 219-230. 1970. [From Biol. Abstr. 52(15), 1971. In Romanian with French summ.] *WR 143: 60*

Roth, Roland Ray. ECOLOGICAL FEATURES OF BIRD COMMUNITIES IN SOUTH TEXAS BRUSH-GRASSLANDS. *Ph.D. thesis, Univ. Ill.* (Urbana-Champaign). 133 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(2), 1971.] *WR 143: 60*

Schuez, Ernst. ORNITHOLOGISCHER OKTOBER-BESUCH AM TANA-SEE (UND BEI ADDIS ABEBA), AETHIOPIEN. [ORNITHOLOGICAL VISIT IN OCTOBER TO TANA LAKE (AND NEAR ADDIS ABABA), ETHIOPIA.] *Stuttgarter Beitr. Naturk.* 189. p. 1-42, illus. 1968. [From Biol. Abstr. 52(13), 1971. In German.] *WR 143: 60*
[Staatl. Mus. Naturk., Stuttgart, Germany.] October and April bird observations are compared.

Sealy, Spencer G., Francis H. Fay, Jean Bédard, and Miklos D. F. Udvardy. NEW RECORDS AND ZOOGEOGRAPHICAL NOTES ON THE BIRDS OF ST. LAWRENCE ISLAND, BERING SEA. *Condor* 73(3): 322-336, 3 figs. Autumn 1971. *WR 143: 60*
[Univ. Mich., Ann Arbor.] Observations of 55 spp. of rare and uncommon birds on St. Lawrence Island, Alaska, between 1958 and 1969, with a discussion of the zoogeographical significance of these and previous records. The known avifauna there comprises 141 spp. Sixty-nine species are known or presumed to nest on the island.--From summ.

Sick, Helmut. BLACKPOLL WARBLER ON WINTER QUARTERS IN RIO DE JANEIRO, BRAZIL. *Wilson Bull.* 83(2): 198-200. June 1971. *WR 143: 60*
[Museu Nacional, Quinta da Bõa Vista, Rio de Janeiro, Brazil.] Courtesy/ Paul A. Stewart.

Stanford, J. S. AN ANNOTATED CHECK LIST OF BIRDS OF CACHE VALLEY, UTAH-IDAHO. *Proc. Utah Acad. Sci. Arts Lett.* 46(1): 134-141. 1969. [From Biol. Abstr. 52 (17), 1971.] *WR 143: 60*
[Utah State Univ., Salt Lake City.]

Tricot, J. QUATRIEME RAPPORT DE LA COMMISSION D'HOMOLOGATION AVES. [4TH REPORT OF THE AVES HOMOLOGATION COMMISSION (BELGIUM).] *Aves* 6(2): 37-52, illus. 1969. [From Biol. Abstr. 52(19), 1971. In French.] *WR 143: 60*
A list is given of species observed (1967-68) which were approved by the Commission, after receiving a scientific guarantee of authenticity.

Vanroy, J., and J. Tricot. CHRONIQUE ORNITHOLOGIQUE 8: MARS, AVRIL, MAI 1966. [ORNITHOLOGICAL CHRONICLE 8: MARCH, APRIL, MAY 1966.] *Aves* 7(2): 53-69. 1970. [From Biol. Abstr. 52(18), 1971. In French.] *WR 143: 60*

Yamashina, Yoshimaro. [BIRDS COLLECTED BY THE KYOTO UNIVERSITY WEST IRIAN SCIENTIFIC EXPEDITION, 1963-64, IN THE CENTRAL HIGHLANDS OF WEST NEW GUINEA.] *Misc. Rep. Yamashina's Inst. Ornithol.* 6(1/2): 1-15. 1970. [From Biol. Abstr. 52(19), 1971. In Japanese with English summ.] *WR 143: 60*
[Yamashina's Inst. Ornithol., Tokyo, Japan.]

BIRDS--POPULATIONS & FLUCTUATIONS

Dexter, Ralph W. FURTHER STUDIES ON THE INCURSIONS OF EVENING GROSBEAKS INTO NORTHEASTERN OHIO, 1967-1970. *Inland Bird Banding News* 42(5): 170-173. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 61*
[Kent State Univ., Kent, Ohio.] The number and fluctuation of locality records for *Hesperiphora vespertina* are given.

Georg, P. V., and Jacques Vielliard. MIDWINTER OBSERVATIONS ON BIRDS OF CENTRAL AND SOUTH IRAQ (21 DECEMBER 1967 TO 18 JANUARY 1968). *Bull. Iraq Natur. Hist. Mus.* (Univ. Baghdad) 4(2/3/4): 61-85. 1970. [From Biol. Abstr. 52(16), 1971. In English with French and Arabic summ.] *WR 143: 61*
[Iraq Natur. Hist. Mus., Baghdad, Iraq.]

Kuroda, Nagahisa. [A BIRD CENSUS OF THE IMPERIAL PALACE FOR 1969.] *Misc. Rep. Yamashina's Inst. Ornithol.* 6(1/2): 16-31, illus. 1970. [From Biol. Abstr. 52(18), 1971. In Japanese with English summ.] *WR 143: 61*
[Yamashina's Inst. Ornithol., Tokyo, Japan.]

Power, Dennis M. WARBLER ECOLOGY: DIVERSITY, SIMILARITY, AND SEASONAL DIFFERENCES IN HABITAT SEGREGATION. *Ecology* 52(3): 434-443, 1 fig. Late Spring 1971. *WR 143: 61*
[Univ. Toronto, Toronto, Ontario, Canada.] A re-analysis of data presented by J. F. Parnell in The Auk 86(3): 505-521 (see *WR 137: 57*). "The results of the present study do not significantly alter Parnell's general conclusions. They do, however, refine many of his statements, reframe some questions concerning seasonal relationships and differences, and answer some altogether new questions."--Courtesy/ Paul A. Stewart.

Rosenberg, N. T., N. Hesselbjerg Christensen, and B. Gensbol. BIRD OBSERVATIONS IN NORTHEAST GREENLAND. *Medd. Gronland* 191(1): 6-85, illus. 1970. [From Biol. Abstr. 52(18), 1971.] *WR 143: 61*

Salvan, J. REMARQUES SUR L'EVOLUTION DE L'AVIFAUNE MALGACHE DEPUIS 1945. [REMARKS ON THE CHANGES OF THE AVIAN FAUNA OF MADAGASCAR SINCE 1945.] *Alauda* 38(3): 191-203. 1970. [From Biol. Abstr. 52(13), 1971. In French.] *WR 143: 61*
[2 R.P., B.P.C., Evato Aeroport, Madagascar.]

Tyrväinen, H. THE MASS OCCURRENCE OF THE FIELDFARE (*TURDUS PILARIS* L.) IN THE WINTER OF 1964/65 IN FINLAND. *Ann. Zool. Fenn.* 7(4): 349-357, illus. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 61*
[Solkikatu 4 A 3, Tampere, Finland.]

Verner, Jared. SURVIVAL AND DISPERSAL OF MALE LONG-BILLED MARSH WRENS. *Bird-Banding* 42(2): 92-98. Apr. 1971. *WR 143: 61*
[Central Wash. State Coll., Ellensburg.] The survival rate for adult male long-billed marsh wrens (*Telmatodytes palustris*) during one year was 18.4% and 12.1% for young birds. The mean distance between nests of adult males in successive years was 386 m. The mean distance between hatching places and first year nesting sites was 1951 m.--From summ. Courtesy/ Paul A. Stewart.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Mills, Eric L. HURRICANE "GLADYS" AND ITS ORNITHOLOGICAL EFFECT ON THE MARITIME PROVINCES. *Nova Scotia Bird Soc. Newsl.* 11(1): 6-16. 1969. [From Bird-Banding 42(2), 1971.] *WR 143: 61*

Sousa, S. Mario. INFLUENCIA DE LAS AVES EN LA VEGETACIÓN DE LA LAGUNA DEL MAJAHUAL EN LOS TUXTLAS, VER. [INFLUENCE OF BIRDS ON THE PLANT LIFE OF THE MAJAHUAL LAGOON IN LOS TUXTLAS, VERACRUZ.] *Bol. Soc. Bot. Mexico* 30. p. 97-112, illus. 1969. [From Biol. Abstr. 52(14), 1971. In Spanish.] *WR 143: 61*

Stewart, Paul A. PERSISTENCE OF REMAINS OF BIRDS KILLED ON MOTOR HIGHWAYS. *Wilson Bull.* 83(2): 203-204. June 1971. *WR 143: 62*
[USDA, Entomol. Res. Div., Oxford, N.C.] On a much-travelled interstate highway remains of birds disappeared within two hours, but on a hardtop country road parts of birds remained throughout daylight periods, disappearing during the first night.

Taylor, Reese J., and Edwin D. Michael. PREDATION ON AN INLAND HERONRY IN EASTERN TEXAS. *Wilson Bull.* 83(2): 172-177. June 1971. *WR 143: 62*
[Stephen F. Austin State Univ., Nacogdoches, Tex.] No young were produced in two nesting attempts during the same season. In the first nesting attempts 140 nests were found; in the second attempts 181 nests were found.--Courtesy/ Paul A. Stewart.

Thiollay, Jean-Marc. L'EXPLOITATION PAR LES OISEAUX DES ESSAIMAGES DE FOURMIS ET TERMITES DANS UNE ZONE DE CONTACT SAVANE-FORÊT EN CÔTE-D'IVOIRE. [USE BY BIRDS OF SWARMS OF ANTS AND TERMITES IN A SAVANNAH-FOREST CONTACT ZONE ON THE IVORY COAST.] *Alauda* 38(4): 255-273. 1970. [From Biol. Abstr. 52(15), 1971. In French with English summ.] *WR 143: 62*
[Ec. Norm. Super., Paris, France.]

BIRDS--PARASITES & DISEASES

Catling, Paul M. ECTOPARASITES FROM THE GENUS *AEGOLIUS*. *Bird-Banding* 42(2): 127. Apr. 1971. *WR 143: 62*
[104 Victoria Park Ave., Toronto 13, Ontario, Canada.] Notes on ectoparasites found on *Aegolius acadicus* and *A. funereus*.--Courtesy/ Paul A. Stewart.

Chrisp, Clarence E., Gary A. Boorman, and Joel T. Kerlan. EPIZOOTIOLOGY AND CONTROL OF SALMONELLOSIS IN A LABORATORY AVIARY. *Lab. Anim. Sci.* 21(1): 49-53, illus. 1971. [From Biol. Abstr. 52(13), 1971.] *WR 143: 62*
[Univ. Calif., Davis.]

Meredov, M., T. T. Larchenko, and G. S. Bel'skaya. [NEMATODES OF BURROW BIRDS IN TURKMENIA.] *Izv. Akad. Nauk Turkm. SSR Ser. Biol. Nauk* 6. p. 63-69, illus. 1970. [From Biol. Abstr. 52(14), 1971. In Russian with English summ.] *WR 143: 62*
[Inst. Zool., Acad. Sci. Turkm. SSR, Ashkhabad, USSR.] Nematodes of 11 spp. of burrow birds.

Rékási, József. ADATOK A VADON ÉLŐ MADARAK MALLOPHAGA-FERTŐZÖTTSÉGÉRŐL. [DATA ON THE INFESTATION OF WILD BIRDS WITH MALLOPHAGA.] *Parasitol. Hung.* 3(3): 207-212. 1970. [From Biol. Abstr. 52(18), 1971. In Hungarian with English summ.] *WR 143: 62*
[All. gimnazium, Bacsalmas, Hungary.]

Shcherbinina, O. K. [THE FAUNA OF EXTERNAL PARASITES OF WILD GALLINACEAE IN TURKMENIA.] *Izv. Akad. Nauk Turkm. SSR Ser. Biol. Nauk* 6. p. 79-80. 1970. [From Biol. Abstr. 52(14), 1971. In Russian with English summ.] *WR 143: 62*
[Inst. Zool., Acad. Sci. Turkm. SSR, Ashkhabad, USSR.]

Speich, Steven. *COLLYRICLUM FABA*: A NEW HOST AND DISTRIBUTIONAL RECORD FROM CALIFORNIA. *Auk* 88(3): 668-669. July 1971. *WR 143: 62*
[Univ. Ariz., Tucson.] Specimens of the trematode, *Collyriclum faba*, were found in subcutaneous cysts on cliff swallows *(Petrochelidon pyrrhonota)*.--Courtesy/ Paul A. Stewart.

GAME BIRDS--GENERAL

Benson, D. A. THE CANADA MIGRATORY GAME BIRD HUNTING PERMIT AND RELATED SURVEYS. *Canadian Wildl. Serv. Occas. Pap.* no. 11. 15 p., 3 figs. 1971. In English with French abstr. *WR 143: 63*

Abstract: For the first time in Canada purchase and possession of a federal permit were required of persons hunting migratory birds for sport during the 1966-67 hunting season. This paper presents the background and describes the development of the permit system, outlines the mail surveys which sample the universe of hunters who have bought Canada migratory game bird hunting permits, briefly describes the parts survey which provides estimates of the species composition of the retrieved kill in each province and gives examples of the results of the system.

Boag, D. A., A. Watson, and N. Bousfield. CHARACTERISTICS OF PHEASANT X CAPERCAILLIE HYBRIDS. *Scottish Birds* 6(6): 313-316. Summer 1971. *WR 143: 63*

Two pheasant x capercaillie hybrids from Kincardineshire are described and compared with the five previously described specimens.--From summ.

MacDonald, Duncan, and Elwood Martin. TRENDS IN HARVEST OF MIGRATORY GAME BIRDS OTHER THAN WATERFOWL 1964-65 TO 1968-69. *U.S. Fish Wildl. Serv., Spec. Sci. Rep.--Wildl.* no. 142. iv + 29 p. 1971. For sale at 40¢ by Supt. Documents, GPO, Washington, D.C. *WR 143: 63*

[Bur. Sport Fisheries & Wildl., Washington, D.C.] Abstract: Responses to questions pertaining to harvest of migratory game birds other than waterfowl and coots included in the annual mail questionnaire survey of waterfowl hunters are summarized for the hunting seasons of 1964-65 through 1968-69. Results show an upward trend in hunting and harvest of other migratory game birds. This trend is correlated with an increase in duck stamp sales since 1965-66 but in general the increase in other migratory game bird hunting is greater. Analysis of these data demonstrates the weaknesses inherent in using a sampling frame based on duck stamp buyers to assess harvest and hunting of other migratory game birds.

Stokes, A. W., and H. Warrington Williams. COURTSHIP FEEDING IN GALLINACEOUS BIRDS. *Auk* 88(3): 543-559, 4 figs. July 1971. *WR 143: 63*

[Utah State Univ., Logan.] Courtship feeding and its possible functions and origin are discussed.--Courtesy/ Paul A. Stewart.

QUAIL

Cushwa, Charles T., Robert E. Martin, and Melvin L. Hopkins. MANAGEMENT OF BOBWHITE QUAIL HABITAT IN PINE FORESTS OF THE ATLANTIC PIEDMONT. *Ga. Forest. Res. Pap.* 65: 1-5, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 63*

[Pa. Coop. Wildl. Res. Unit, University Park.]

Dawson, L. E., L. R. York, N. Amon, C. Kulenkamp, and T. H. Coleman. PROCESSING AND YIELD CHARACTERISTICS OF BOBWHITE QUAIL. *Poultry Sci.* 50(5): 1346-1349, 2 figs. Sept. 1971. *WR 143: 63*

[Mich. State Univ., East Lansing.] Summary: Male and female battery-reared Bobwhite quail were processed at 10, 12, 14, 16 and 18 weeks of age. Chicken processing equipment and procedures were evaluated and/or modified. String shackles replaced the chicken shackles, and birds 10 to 14 weeks of age received a double coating of Duxwax to assist in removal of feathers and protruding pin feathers missed by the picker. At 10 weeks of age, live weights of males and females averaged 156 grams. At 12 and 14 weeks of age, males outweighed the females, but at 18 weeks of age, females averaged about 5 g more than males. Yields of dressed weights (from live weights) were the same for males and females, and increased from 89% at 10 weeks of age to 92.5% at 18 weeks of age. Ready-to-cook yields (from live weights) increased slightly from 10 to 18 weeks of age, averaging 71%.

QUAIL--Continued

Johnsgard, Paul A. EXPERIMENTAL HYBRIDIZATION OF THE NEW WORLD QUAIL (ODONTOPHORINAE). *Auk* 88(2): 264-275, 3 figs. Apr. 1971. *WR 143: 64*
[Univ. Nebr., Lincoln.] Seven mixed pairs produced offspring, and offspring from five intergeneric crosses were reared to maturity. A high proportion of the eggs laid by the hybrid females were infertile or the embryo died in early stages of incubation.--Courtesy/ Paul A. Stewart.

Vince, Margaret A., and Susan Chinn. EFFECT OF ACCELERATED HATCHING ON THE INITIATION OF STANDING AND WALKING IN THE JAPANESE QUAIL. *Anim. Behav.* 19(1): 62-66, 2 figs. Feb. 1971. *WR 143: 64*
[Cambridge Univ., Cambridge, England.]

Wilcoxon, Hardy C., William B. Dragoin, and Paul A. Kral. ILLNESS-INDUCED AVERSIONS IN RAT AND QUAIL *(COLINUS VIRGINIANUS)*: RELATIVE SALIENCE OF VISUAL AND GUSTATORY CUES. *Science* (Washington) 171(3973): 826-828, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 64*
[George Peabody Coll. Teachers, Nashville, Tenn.]

GROUSE, PARTRIDGE, ETC.

Anderson, Raymond K. ORIENTATION IN PRAIRIE CHICKENS. *Auk* 88(2): 286-290. Apr. 1971. *WR 143: 64*
[Wis. State Univ., Stevens Point.] For territorial boundaries on their booming grounds, prairie chicken *(Tympanuchus cupido pinnatus)* cocks oriented to natural features such as fencelines and vegetation of different heights.--Courtesy/ Paul A. Stewart.

Ellison, Laurence N. TERRITORIALITY IN ALASKAN SPRUCE GROUSE. *Auk* 88(3): 652-664, 4 figs. July 1971. *WR 143: 64*
[Univ. Calif., Berkeley.] Studies with use of radio transmitters revealed that adult male spruce grouse *(Canachites canadensis)* were localized on areas 5-9 acres in size during the first three weeks of May. Activity centers of juvenile males ranged in size from 7 to 16 acres. Censuses in late April and May indicated a population of ten males per square mile in 1965 and 1966 and seven per square mile in 1967. "Territoriality among males in spring is probably not a population regulating mechanism."--Courtesy/ Paul A. Stewart.

Harju, Harold J. SPRUCE GROUSE COPULATION. *Condor* 73(3): 380-381. Autumn 1971. *WR 143: 64*
[Northern Mich. Univ., Marquette.]

Hollander, Priscilla Larson. HORMONAL ASPECTS OF SALT AND WATER BALANCE IN *ALECTORIS BARBARA*. *Ph.D. thesis, Yale Univ.* 181 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 64*

DOVES & PIGEONS

Carpenter, James W. NESTING OF THE MOURNING DOVE IN NORTHWEST OKLAHOMA. *Proc. Okla. Acad. Sci.* 49: 163-169, illus. 1970. [From Biol. Abstr. 52(16), 1971.] *WR 143: 64*
[Okla. Coop. Wildl. Res. Unit, Stillwater.]

Černý, Vladimír. DIE PARASITISCHEN ARTHROPODEN DER SYNANTHROPEN TAUBEN-VOEGEL EINER GROSSSTADT. [THE PARASITIC ARTHROPODS OF THE SYNANTHROPIC PIGEONS OF A LARGE CITY.] *Angew. Parasitol.* 11(4): 244-248. 1970. [From Biol. Abstr. 52(13), 1971. In German with Russian and English summ.] *WR 143: 64*
[Parasitol. Inst., Czechoslovak Acad. Sci., Prague, Czechoslovakia.]

Goforth, W. Reid, and Thomas S. Baskett. EFFECTS OF COLORED BACKGROUNDS ON FOOD SELECTION BY PENNED MOURNING DOVES *(ZENAIDURA MACROURA)*. *Auk* 88(2): 256-263, 2 figs. Apr. 1971. *WR 143: 65*

[Univ. Mo., Columbia.] Use of food was highest when the background was blue and lowest when it was yellow. Green ranked close to yellow, and red ranked between blue and green.--Courtesy/ Paul A. Stewart.

Goforth, W. Reid, and Thomas S. Baskett. SOCIAL ORGANIZATION OF PENNED MOURNING DOVES. *Auk* 88(3): 528-542, 4 figs. July 1971. *WR 143: 65*

[Univ. Mo., Columbia.] Independently of sex, six mourning doves *(Zenaidura macroura)* established a social ranking during the winter. Before the breeding season the hierarchy split into two groups of the sexes. Dominant males paired with dominant females, and the dominant birds of both sexes were first to pair and select nesting territories. Dominant pairs were most successful in reproductive efforts. Nesting material was defended but not food and water. Reproductive cycles did not progress beyond courtship when nesting material was lacking, and cycles of subordinate pairs were arrested when all suitable nesting material was defended by dominant males.--Courtesy/ Paul A. Stewart.

Juckwer, Ernst-Adolf. DIE GROSSGEFIEDERMAUSER DER TAUBEN AM BEISPIEL DER TUERKENTAUBE, *STREPTOPELIA DECAOCTO*. [THE MOLT OF THE REMIGES AND RETRICES OF THE DOVE USING THE EXAMPLE OF COLLARED TURTLE DOVES, *STREPTOPELIA DECAOCTO*.] *Bonn. Zool. Beitr.* 21(3/4): 237-250, illus. 1970. [From Biol. Abstr. 52(15), 1971. In German with English summ.] *WR 143: 65*

[Ornithol. Abt., Mus. A. Koenig, Bonn, Germany.]

Keeton, William T. MAGNETS INTERFERE WITH PIGEON HOMING. *Proc. Nat. Acad. Sci. USA* 68(1): 102-106, illus. 1971. [From Biol. Abstr. 52(13), 1971.] *WR 143: 65*

[Cornell Univ., Ithaca, N.Y.] Magnets glued to the backs of experienced pigeons often resulted in disorientation when the birds were released from distances of 17-31 mi. (27-50 km) under total overcast. No such disorientation occurred during similar releases under clear skies.

Maridon, Brian, and Larry C. Holcomb. NO EVIDENCE FOR INCUBATION PATCH CHANGES IN MOURNING DOVES THROUGHOUT REPRODUCTION. *Condor* 73(3): 374-375. Autumn 1971. *WR 143: 65*

[Creighton Univ., Omaha, Nebr.] *"Zenaidura macroura."*

McDonald, Dennis Lesley. SOME ASPECTS OF THE USE OF VISUAL CUES IN DIRECTIONAL TRAINING AND HOMING OF PIGEONS. *Ph.D. thesis, Duke Univ.* 99 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 65*

An investigation of how accurately homing pigeons *(Columba livia)* can measure the position of a light source.

Ruos, James L. MOURNING DOVE STATUS REPORT, 1970. *U.S. Fish Wildl. Serv., Spec. Sci. Rep.--Wildl.* no. 141. iv + 36 p., 12 figs. May 1971. *WR 143: 65*

[Migratory Bird Populations Sta., Laurel, Md.] Abstract: Mourning dove population indexes increased by 4% from 1969 to 1970 in the Eastern Management Unit, but declined 2% in the Central Management Unit and 11% in the Western Management Unit. The changes were not statistically significant. The 1970 indexes were below the 10-year means, 1960-69, by 3% in the Eastern Unit, 15% in the Central, and 27% in the Western. Regression analyses of the call-count data for 1960-70 indicate a statistically significant downward trend in dove breeding populations in all management units; mean rates of decline were 1% a year in the Eastern Unit, 3% a year in the Central, and 4% a year in the Western. Changes in the population indexes are described by State and physiographic region. The 1970 indexes were generally lower than in 1969 in the northern and western areas of the country, and generally higher in sections of the Rocky Mountains, the middle States, and the eastern seaboard. Regression

analyses of 11 years' data, 1960 to 1970, indicate a statistically significant downward trend in population in much of the area represented by the northern Great Plains and Pacific border and southern border States. Trends are significantly upward in several scattered mid-latitude States.

Sturtevant, Joan. THE EFFECTS OF MESTRANOL-CONTAINING SYNTHETIC GRIT ON THE BREEDING OF PIGEONS. *Toxicol. & Appl. Pharmacol.* 19(4): 634-648, 1 fig. Aug. 1971. *WR 143: 66*

[10 Brewster Ave., Easthampton, Mass.] In studies involving 268 control and treated pigeons, it was possible to reduce problem pigeon populations using synthetic grit as the medium for treating adult pigeons with mestranol (a steroidal estrogen) and for reducing fertility in their progeny. Grit was present in the adult gizzard at autopsy 6 mo after treatment, and was passed to the young before weaning throughout the 6 mo. Synthetic grit may be retained in the F_1 gizzard through maturation. Mestranol or a metabolite passed to the young in crop milk or in grit particles from parents before complete sexual differentiation disrupted the normal sequence of gonadal development leading to fertility, thereby modifying the fecundity of these birds. The method of using synthetic grit containing mestranol in pigeon food pellets for pigeon population control involves no debilitation or lethality.--From abstr.

Sturtevant, Joan. EVALUATION OF ENVIRONMENTAL HAZARDS FOLLOWING THE USE OF SYNTHETIC GRIT CONTAINING MESTRANOL FOR PIGEON CONTROL. *Toxicol. & Appl. Pharmacol.* 19(4): 649-659. Aug. 1971. *WR 143: 66*

[10 Brewster Ave., Easthampton, Mass.] Mestranol in the form used for pigeon population control has no effect on representative organisms of components of the pigeons' feeding habitat.--From abstr.

Vowles, D. M., and E. Prewitt. STIMULUS AND RESPONSE SPECIFICITY IN THE HABITUATION OF ANTI-PREDATOR BEHAVIOUR IN THE RING DOVE *(STREPTOPELIA RISORIA)*. *Anim. Behav.* 19(1): 80-86, 1 fig. Feb. 1971. *WR 143: 66*

[Univ. Edinburgh, Edinburgh, Scotland.] Abstract: An experiment is described in which fearful behaviour shown by ring doves to model predators was habituated. The doves were then injected with progesterone or prolactin. This induced defensive or aggressive motivation. When the original model was presented very few aggressive, defensive or fearful responses were shown. However, when a novel stimulus was used all three types of response occurred at a normal level. This demonstrates that when fearful behaviour has been habituated to a particular stimulus the effect generalizes to other forms of agonistic response, but not to other stimuli.

Wallraff, Hans G. ÜBER DIE FLUGRICHTUNGEN VERFRACHTETER BRIEFTAUBEN IN ABHÄNGIGKEIT VOM HEIMATORT UND VOM ORT DER FREILASSUNG. [FLIGHT DIRECTIONS OF DISPLACED HOMING PIGEONS DEPENDENT ON THE HOME SITE AND THE RELEASE SITE.] *Z. Tierpsychol.* 27: 303-351. 1970. [From Bird-Banding 42(2), 1971. In German.] *WR 143: 66*

Wallraff, Hans G. WEITERE VOLIEREN-VERSUCHE MIT BRIEFTAUBEN: WAHRSCHEINLICHER EINFLUSS DYNAMISCHER FAKTOREN DER ATMOSPHÄRE AUF DIE ORIENTIERUNG. [FURTHER AVIARY EXPERIMENTS WITH HOMING PIGEONS: PROBABLE INFLUENCE OF DYNAMIC FACTORS OF THE ATMOSPHERE ON THEIR ORIENTATION.] *Z. Vergl. Physiol.* 68: 182-201. 1970. [From Bird-Banding 42(2), 1971. In German with English summ.] *WR 143: 66*

WATERFOWL

Appert, Otto. DIE TAUCHER (PODICIPIDAE) DER MANGOKYGEGEND IN SUEDWEST-MADAGASKAR. [THE GREBES (PODICIPIDAE) OF THE MANGOKY AREA OF MADAGASCAR.] *J. Ornithol.* 112(1): 61-69, illus. 1971. [From Biol. Abstr. 52(16), 1971. In German with French summ.] *WR 143: 66*

Baysinger, Earl B., and Richard D. Bauer. A DOCUMENTED INSTANCE OF REVERSE MIGRATION IN THE PINTAIL. *Auk* 88(2): 438. Apr. 1971. *WR 143: 67*
[Bur. Sport Fisheries & Wildl., Washington, D.C.] A pintail *(Anas acuta)* was banded as an immature during late August in California and recovered 43 days later 1,600 miles northward in Alaska.--Courtesy/ Paul A. Stewart.

Geis, Aelred D. BREEDING AND WINTERING AREAS OF MALLARDS HARVESTED IN VARIOUS STATES AND PROVINCES. *U.S. Fish Wildl. Serv., Spec. Sci. Rep.--Wildl.* no. 144. iv + 59 p. 1971. For sale at 60¢ by Supt. Documents, GPO, Washington, D.C. *WR 143: 67*
[Migratory Bird Populations Sta., Laurel, Md.] Abstract: Band recoveries from mallards banded in breeding and wintering areas, weighted to reflect the population sizes they represent, were used to estimate the relative contribution of various breeding and wintering areas to the harvest in each State and Province. Sources of population data in addition to conventional waterfowl breeding population surveys were utilized resulting in larger continent-wide population estimates than those previously published. The estimates of the relative importance of various breeding and wintering areas to the kill in each State and Province are presented in a series of tables. Patterns among States in the similarity or the dissimilarity in the source of harvest are mentioned.

Harrison, James M., and Jeffery G. Harrison. A BACK-CROSS HYBRID INVOLVING CINNAMON TEAL AND NORTHERN SHOVELER, AND REMARKS ON HYBRID CHARACTERS IN THE GROUP OF "BLUE-WINGED DUCK". *Bull. British Ornithol. Club* 91(4): 99-103, 2 [figs.]. Aug. 1971. *WR 143: 67*

Havlín, Jiří. NATURAL PRODUCTIVITY OF WILDFOWL ON THE NAMESTSKE RUBNIKY PONDS (CZECHOSLOVAKIA). *Zool. Listy* 19(4): 343-364, illus. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 67*
[Inst. Vertebr. Zool., Czech. Acad. Sci., Brno, Czechoslovakia.]

Höhn, E. O. ATTEMPTED HORMONAL INDUCTION OF BROOD PATCHES AND BROODINESS IN DUCKS. *Auk* 88(3): 674-676. July 1971. *WR 143: 67*
Large doses of prolactin following a pretreatment with an estrogen produced no effect on female mallards *(Anas platyrhynchos)* during December and January beyond some stimulation of growth of down on the under parts and, in two birds, some shedding of down.--Courtesy/ Paul A. Stewart.

Hubbard, John P. COMPARISON OF TWO PRESUMED EUROPEAN X AMERICAN WIDGEON HYBRIDS. *Auk* 88(3): 666-668. July 1971. *WR 143: 67*
[Del. Mus. Natur. Hist., Greenville.] Plumage characteristics of two specimens of *Anas penelope* X *A. americana* are compared.--Courtesy/ Paul A. Stewart.

Isakov, Y. A., editor. PROCEEDINGS INTERNATIONAL REGIONAL MEETING ON CONSERVATION OF WILDFOWL RESOURCES (EUROPE, WESTERN ASIA, NORTHERN AND TROPICAL AFRICA) / LENINGRAD, USSR / 25-30 SEPTEMBER 1968. *Izv. Sovetov Deputat. Trud. SSSR* (Moscow). 423 p., illus. 1970. In English. Price 3 rubles. *WR 143: 67*
Includes the following papers: *Distribution and number of waterfowl populations on their breeding grounds in Europe and West Asia*, Y. A. Isakov; *Status and distribution of waterfowl resources in the western part of the USSR*, Y. A. Isakov; *Geographical distribution of the main dabbling duck populations in the USSR and main directions of their migrations*, T. Shevareva; *Wildfowl in the arctic and subarctic zones of the USSR*, S. Uspensky; *Resources of eider on the Murman and the White Sea*, V. Karpovitch and B. Kester; *Wildfowl in the Soviet Baltic region*, E. V. Kumari, H. A. Michelsons, and T. L. Ivanauskas; *Wildfowl in the central provinces of the European part of the USSR*, S. Priklonsky, M. Pavlov, and V. Panchenko; *Wildfowl of the Ukrainian Black Sea coastal region*, T. Ardamatskaya; *The Volga delta as a wildfowl haunt*, G. Krivonossov; *State of the stock of wildfowl in the lake forest-steppe and lake-steppe of western Siberia*, K. Yurlov; *Numbers of waterfowl in Kazakhstan*,

V. Gavrin; *Wildfowl wintering in the Kara-Kum Canal Basin in south Turkmenia*, A. Tashliev, A. Eminov, and A. Sukhinin; *Status of the species of wildfowl occurring in Finland*, P. Grenquist; *Status of wildfowl occurring in Sweden*, K. Curry-Lindahl, L.-E. Esping, and J. Höjer; *Present status of the Svalbard/Franz Josef Land population of the light-bellied brent goose* (Branta bernicla hrota), M. Norderhaug; *Wildfowl situation in England, Scotland, and Wales*, G. L. Atkinson-Willes; *Notes on species of geese wintering in Britain*, M. A. Ogilvie; *Status of the species of wildfowl occurring in Ireland*, R. F. Ruttledge; *Status of the species of wildfowl occurring in Denmark*, J. Fog and A. Holm Joensen; *Status of the species of wildfowl occurring in the German Democratic Republic*, E. Rutschke; *Status of the species of wildfowl occurring in the German Federal Republic*, J. Szijj; *Wildfowl situation in Poland*, E. Novak; *Status of the species of wildfowl occurring in the ČSSR*, K. Hudec; *Status of wildfowl occurring in Hungary*, F. Szabo; *Wildfowl nesting in Bulgaria*, S. Dontchev; *Exploitation of wildfowl crossing Bulgaria*, N. K. Boev; *Status of the species of wildfowl occurring in Belgium*, l'Administration des Eaux et Forêts, Service de la Chasse et de la Pêche; *Some remarks on the wildfowl occurring in Belgium*, Th. Robyns de Schneidauer; *Present status of different species of wildfowl occurring in France*, Chr. Jouanin; *Report from Italy*, A. Toschi; *Status of the species of wildfowl in Tunisia*, M. Smart; *Status of the palearctic wildfowl occurring in Ethiopia*, E. K. Urban; *Wildfowl status in Turkey*, T. Gürpinar and W. H. N. Wilkinson; *Status of the species of wildfowl occurring in Iraq*, P. V. Georg and C. D. W. Savage; *Status of wildfowl in Jordan*, A. M. Dakhgan and A. Bandak; *Status of the species of wildfowl occurring in Iran*, E. Firouz and D. Ferguson; *Status of wildfowl species in West Pakistan*, C. D. W. Savage; *Status of wildfowl species in the Vale of Kashmir*, C. D. W. Savage and Humayun Abdulali; *Status of wildfowl species in northern India*, C. D. W. Savage and Humayun Abdulali; *Status of wildfowl species in western India*, C. D. W. Savage and Humayun Abdulali; *Status of wildfowl species in central India*, C. D. W. Savage and Humayun Abdulali; *Status of wildfowl species in southern India*, C. D. W. Savage and Humayun Abdulali; *Status of wildfowl species in Ceylon*, C. D. W. Savage, C. E. Norris, and R. McL. Cameron; *Status of wildfowl species in East Pakistan and West Bengal*, C. D. W. Savage and Humayun Abdulali; *Wetlands and wildfowl of Upper Assam*, C. D. W. Savage and M. J. S. Mackenzie; *Report on the January census of palaearctic wildfowl in Europe, South-West Asia and North Africa, 1967 and 1968*, G. L. Atkinson-Willes; *Wintering of waterfowl in the USSR*, Y. A. Isakov; *Mid-winter distribution of wildfowl in South-West Asia and the Middle East*, C. D. W. Savage; *Palaearctic wildfowl in tropical West Africa*, F. Roux; *Proposals for a network of wildfowl refuges*, C. D. W. Savage; *Status of the main wildfowl resorts in Sweden*, K. Curry-Lindahl, L.-E. Esping, and J. Höjer; *Proposals for the new Finnish MAR List by the Finnish MAR Committee*, A. Haapanen; *State reserves and refuges for wildfowl in the USSR*, V. Kozlovsky; *Report from Poland*, E. Novak; *Information from Rumania*, A. Filipascu; *Measures being taken to conserve and manage wildfowl in the German Democratic Republic*, E. Rutschke; *Report from the German Federal Republic*, J. Szijj; *Status of the main wetland sites in Denmark*, J. Fog and A. Holm Joensen; *Status of the main wildfowl resorts in Ireland*, F. O'Gorman, R. F. Ruttledge, O. Merne, and J. Furphy; *Report from France*, Chr. Jouanin; *Report from Tunisia*, M. Smart; *Status of the main wildfowl resorts in Ethiopia*, E. K. Urban; *Report from Turkey*, T. Gürpinar and W. H. N. Wilkinson; *Status of the main wildfowl resorts in Jordan*, A. M. Dakhgan and A. Bandak; *Status of the main wildfowl resorts in Iran*, E. Firouz and D. Ferguson; *Status of the main wildfowl resorts in Iraq*, P. V. Georg and C. D. W. Savage; *Status of the main wildfowl resorts in Pakistan*, C. D. W. Savage; *Status of the main wildfowl resorts in India*, Humayun Abdulali and C. D. W. Savage; *Report from Ceylon*, C. D. W. Savage; *Increasing the capacity of wildfowl habitats*, N. V. Yelisseyev; *Measures to improve and safeguard wildfowl habitats in the German Federal Republic*, J. Szijj; *Measures being taken to conserve and manage wildfowl habitats in Sweden*, K. Curry-Lindahl, L.-E. Esping, and J. Höjer; *Methods of increasing capacity of inland waters as wildfowl breeding ground*, H. Michelsons, G. Lejiņs, and J. Wiksne; *Artificial nests for waterfowl and their effective*

use, F. Ivanov; *Experience in increasing the capacity of lakes for wildfowl habitats in western Siberia*, G. K. Korsakov; *A wildfowl programme for Asia*, C. D. W. Savage; *Breeding ground survey methods in North America*, W. F. Crissey; *Wildlife and rural landuse planning*, G. H. Watson; *Ways to and methods of international regulation of wildfowl hunting*, B. Bogdanov; *International regulation of wildfowl hunting*, T. Lampio; *International protection of wildfowl in North America*, J. W. Carroll; *International regulation of hunting. A plea for doubts and discussion*, H. Boyd; *How many wildfowl are shot in the USSR?*, S. Priklonsky; *Experimental count of wildfowl shot in Latvia*, A. Mednis; *Duck shooting in the central European part of the USSR*, Y. Sapetin; *Ethiopian case*, E. K. Urban; and *Certain theoretical aspects of international legal conservation of avifauna resources*, V. A. Chichvarin.

Karstad, Lars. ANGIOPATHY AND CARDIOPATHY IN WILD WATERFOWL FROM INGESTION OF LEAD SHOT. *Conn. Med.* 35(6): 355-360. June 1971. *WR 143: 69*
[Univ. Guelph, Guelph, Ontario, Canada.] Summary: Poisoning by the accidental ingestion of the spent lead shot from hunting causes extensive losses of wild waterfowl. It was found that 75% of 67 lead poisoned ducks, geese and swans suffered myocardial infarctions and that these lesions were associated with fibrinoid necrosis of the media of arterioles and small arteries. Infarcts occurred also in striated muscles and smooth muscles of the gastrointestinal tract. The pathogenesis of the vascular lesions was not determined.

Krzanowski, Adam. ZURBANIZOWANE KACZKI CZERNICE, *AYTHYA FULIGULA* (L.). [ON THE URBANIZATION OF TUFTED DUCKS IN POLAND.] *Przegl. Zool.* 14(4): 387-388. 1970. [From Biol. Abstr. 52(17), 1971. In Polish with English summ.] *WR 143: 69*

McLaughlin, John Daniel. HELMINTH STUDIES ON NEW BRUNSWICK WATERFOWL. *Ph.D. thesis, Univ. New Brunswick.* 1970. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 69*
Twenty-seven species of cestodes, representing six genera, found in waterfowl collected during the period Aug. 15, 1967, to Dec. 19, 1969, are described and supported with figures.

Norman, F. I. WEIGHT LOSS OF BANDS USED ON GREY TEAL. *Australian Bird Bander* 8(2): 29-31. 1970. [From Bird-Banding 42(2), 1971.] *WR 143: 69*
"Anas gibberifrons."

Raikow, R. J. EVOLUTION OF DIVING ADAPTATIONS IN THE STIFFTAIL DUCKS. *Univ. Calif. Publ. Zool.* 94: 1-52. 1970. [From Bird-Banding 42(2), 1971.] *WR 143: 69*
"Heteronetta, Oxyura, and *Biziura* compared with *Anas.*"

Simpson, Marcus B., Jr. STATUS OF THE BARROW'S GOLDENEYE IN NORTH CAROLINA. *Chat* 35(2): 45-49, 1 fig. June 1971. *WR 143: 69*
[P.O. Box 167, Statesville, N.C.] The Barrow's goldeneye should be admitted to the hypothetical list for North Carolina because two reports of it have not been repudiated.--Courtesy/ Paul A. Stewart.

Stewart, Paul A. WOOD DUCKS NESTING IN CHIMNEYS. *Auk* 88(2): 425. Apr. 1971. *WR 143: 69*
[USDA, Entomol. Res. Div., Oxford, N.C.] Reports cases of wood ducks *(Aix sponsa)* entering chimneys and being unable to escape and other cases of these birds successfully nesting in chimneys.

Thomforde, Lawrence L. SURVIVAL OF HAND-REARED MALLARDS *(ANAS PLATYRHYNCHOS)* ON ARTIFICIAL FARM PONDS. *J. Minn. Acad. Sci.* 37(1): 23-26. 1970/1971. [From Biol. Abstr. 52(18), 1971.] *WR 143: 69*
[Kennedy High Sch., Bloomington, Minn.]

Wallraff, Hans Georg. ÜBER DAS ORIENTIERUNGSVERMÖGEN VON VÖGELN UNTER NATÜRLICHEN UND KÜNSTLICHEN STERNENMUSTERN. DRESSURVERSUCHE MIT STOCKENTEN. [THE ORIENTATION ABILITY OF BIRDS UNDER NATURAL AND ARTIFICIAL STAR PATTERNS. TRAINING EXPERIMENTS WITH MALLARDS.] *Verh. Deut. Zool. Ges. Innsbruck* 1968: 348-357. 1969. [From Bird-Banding 42(2), 1971. In German with English summ.] *WR 143: 70*

SWANS & GEESE

Ehlert, Wilfrid. ZUR HELMINTHENFAUNA DER KURZSCHNABELGANS *(ANSER BRACHYRHYNCHUS* BAILLON, 1833*)*. [ON THE HELMINTH FAUNA OF *ANSER BRACHYRHYNCHUS* BAILLON, 1833.] *Zool. Anz.* 183(5/6): 446-454, illus. 1969. [From Biol. Abstr. 52(15), 1971. In German with English summ.] *WR 143: 70*
[Justus Liebig-Univ., Giessen, Germany.]

Samson, Fred B. MIGRATION OF RESIDENT AND MIGRANT CANADA GEESE BANDED AT NECEDAH NATIONAL WILDLIFE REFUGE. *Bird-Banding* 42(2): 115-118, 1 fig. Apr. 1971. *WR 143: 70*
[Utah State Univ., Logan.] Resident Canada geese *(Branta canadensis)* followed a different migration route than transients.—Courtesy/ Paul A. Stewart.

SHOREBIRDS, MARSH BIRDS & THEIR ALLIES

Anderson, Daniel W., and J. F. Kreitzer. THICKNESS OF 1967-69 WHOOPING CRANE EGGSHELLS COMPARED TO THAT OF PRE-1910 SPECIMENS. *Auk* 88(2): 433-434. Apr. 1971. *WR 143: 70*
[Bur. Sport Fish. & Wildl., P.O. Box C, Davis, Calif.] There was no significant difference in thickness of eggshells of whooping cranes *(Grus americana)* on eggs laid before 1910 and those laid during 1967-69.--Courtesy/ Paul A. Stewart.

Bancroft, Griffing. NORTHERN BREEDING RECORD FOR REDDISH EGRET. *Auk* 88(2): 429. Apr. 1971. *WR 143: 70*
[Captiva, Fla.] Reddish egrets *(Dichromanassa rufescens)* were found nesting in Florida 100 miles farther north than recent earlier nesting records.--Courtesy/ Paul A. Stewart.

Clark, Eldon R. WOODCOCK STATUS REPORT, 1970. *U.S. Fish Wildl. Serv., Spec. Sci. Rep.--Wildl.* no. 140. iv + 37 p., 4 figs. 1971. For sale at 50¢ by Supt. Documents, GPO, Washington, D.C. *WR 143: 70*
[Migratory Bird Populations Sta., Laurel, Md.] Abstract: Information on the current status and population trends of the American woodcock is provided by annual singing-ground surveys over much of the species' breeding range and by wing-collection surveys in the eastern United States. The 1970 singing-ground survey showed no change in the breeding population index for the Eastern Region, a 3.12% increase for the Western Region, and a 2.11% increase rangewide. This index is based on 752 comparable survey routes, all randomly selected, 35% more than the 568 routes used in 1969. The wing-collection survey for the 1969-70 season suggested a decline of 7.03% in productivity the previous summer, a slight decline in the average daily bag per hunter, and a sharper drop of 11.1% in the average seasonal bag. There is evidence that the woodcock harvest and the number of hunters participating increased over previous years, with the 1969-70 harvest exceeding 1.1 million birds. Woodcock research is increasing, with the present emphasis directed to banding on breeding grounds.

Dennis, Clifford J. GREAT BLUE HERON OBSERVATIONS ON THE MISSISSIPPI RIVER NEAR BAGLEY, WISCONSIN. *Passenger Pigeon* 33(2): 104-109. Summer 1971. *WR 143: 70*

Dittberner, Hartmut, and Winfried Dittberner. DER BRUTBESTAND DES KIEBITZES *(VANELLUS VANELLUS L.)* IN BERLIN. [THE BREEDING POPULATION OF THE LAPWING *(VANELLUS VANELLUS L.)* IN BERLIN.] *Milu* 2(5): 443-453, illus. 1969. [From Biol. Abstr. 52(18), 1971. In German.] *WR 143: 71*
[Berlin, Germany.]

Dittberner, Hartmut, and Winfried Dittberner. ZUM DURCHZUG DES REGENBRACHVOGELS *(NUMENIUS PHAEOPUS)* IN BRANDENBURG. [ON THE MIGRATION OF THE WHIMBREL *(NUMENIUS PHAEOPUS)* IN BRANDENBURG (GERMANY).] *Milu* 3(1): 15-23. 1970. [From Biol. Abstr. 52(18), 1971. In German.] *WR 143: 71*
[Berlin, Germany.]

Everett, M. J. BREEDING STATUS OF RED-NECKED PHALAROPES IN BRITAIN AND IRELAND. *British Birds* 64(7): 293-302. July 1971. *WR 143: 71*
[The Lodge, Sandy, Bedfordshire, England.] *"Phalaropus lobatus."*

Hafner, Heinz. A PROPOS D'UNE POPULATION DE HÉRONS GARDE-BOEUFS *ARDEOLA IBIS* EN CAMARGUE. [CONCERNING A POPULATION OF CATTLE HERONS *ARDEOLA IBIS* IN CAMARGUE.] *Alauda* 38(4): 250-254. 1970. [From Biol. Abstr. 52(13), 1971. In French.] *WR 143: 71*
[Sta. Biol. Tour du Valat, Le Sambuc, France.]

Hoerschelmann, Heinrich. SCHNABELFORM UND NAHRUNGSERWERB BEI SCHNEPFENVOEGELN (CHARADRIIDAE UND SCOLOPACIDAE). [BEAK FORM AND ACQUISITION OF FOOD IN WOODCOCKS (CHARADRIIDAE AND SCOLOPACIDAE).] *Zool. Anz.* 184(5/6): 302-327, illus. 1970. [From Biol. Abstr. 52(14), 1971. In German.] *WR 143: 71*
[Christian-Albrechts-Univ., Kiel, Germany.]

Höhn, E. Otto. OBSERVATIONS ON THE BREEDING BEHAVIOUR OF GREY AND RED-NECKED PHALAROPES. *Ibis* 113(3): 335-347, 2 figs. 1971. *WR 143: 71*
[Univ. Alberta, Edmonton, Alberta, Canada.] *"Phalaropus fulicarius* and *P. lobatus."*

Józefik, Mieczyslaw. STUDIES ON THE SQUACCO HERON, *ARDEOLA RALLOIDES* (SCOP.): IV. SPATIAL ORGANIZATION AND MECHANISMS INTEGRATING THE SPECIES. *Acta Ornithol.* (Warsaw) 12(10): 1-51, illus. 1970. [From Biol. Abstr. 52(17), 1971. In English with Polish and Russian summ.] *WR 143: 71*

Kahl, M. P. FLAPPING RATES OF STORKS IN LEVEL FLIGHT. *Auk* 88(2): 428. Apr. 1971. *WR 143: 71*
[P.O. Box 2612, Naples, Fla.] With a table of data for 17 spp.--Courtesy/ Paul A. Stewart.

Kahl, M. P. FOOD AND FEEDING BEHAVIOR OF OPENBILL STORKS. *J. Ornithol.* 112(1): 21-35, illus. 1971. [From Biol. Abstr. 52(17), 1971. In English with German summ.] *WR 143: 71*
[P.O. Box 2612, Naples, Fla.] *"Anastomus lamelligerus* and *A. oscitans."*

Kaufmann, Gerald Wayne. BEHAVIOR AND ECOLOGY OF THE SORA, *PORZANA CAROLINA*, AND VIRGINIA RAIL, *RALLUS LIMICOLA*. *Ph.D. thesis, Univ. Minn.* 184 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 71*

Olsen, David L. NESTING ACTIVITY OF HAWAIIAN STILTS AND COOTS AT KII POND, KAHUKU. *Elepaio* 32(2): 11-12. Aug. 1971. *WR 143: 71*

Olson, Clark S., and H. McClure Johnson. GREAT WHITE HERON CAPTURES AND EATS BLACK-NECKED STILT. *Auk* 88(3): 668. July 1971. *WR 143: 71*
[Univ. Miami, Coral Gables, Fla.] An *Ardea occidentalis* captured and ate an *Himantopus mexicanus*.--Courtesy/ Paul A. Stewart.

Siegfried, W. R. THE FOOD OF THE CATTLE EGRET. *J. Appl. Ecol.* 8(2): 447-468, 9 figs. Aug. 1971. *WR 143: 72*
[Univ. Minn., Minneapolis.] Cattle egrets *(Ardeola ibis)* feeding in dairy-cattle pastures in the south-western Cape, South Africa, ate mainly grasshoppers, caterpillars and earthworms, though a wide range of other food categories was taken. The most obvious seasonal change in diet involved earthworms: these accounted for about 60%, by weight, of the total food taken during the rainy season (April to October) and were virtually absent (in the birds' stomach contents) at other times of the year.--From summ.

Soikkeli, Martti. MORTALITY AND REPRODUCTIVE RATES IN A FINNISH POPULATION OF DUNLIN *CALIDRIS ALPINA*. *Ornis Fenn.* 47(4): 149-158. 1970. [From Biol. Abstr. 52(15), 1971. In English with Finnish summ.] *WR 143: 72*
[Univ. Turku, Turku, Finland.]

Uchida, Yasuo. [ON THE COLOR CHANGE IN JAPANESE CRESTED IBIS: A NEW TYPE OF COSMETIC COLORATION IN BIRDS.] *Misc. Rep. Yamashina's Inst. Ornithol.* 6 (1/2): 54-72, illus. 1970. [From Biol. Abstr. 52(18), 1971. In Japanese with English summ.] *WR 143: 72*
[Yamashina's Inst. Ornithol., Tokyo, Japan.] A detailed analysis is given on the mechanism of color change in Japanese crested ibis *Nipponia nippon* based on numerous feather samples collected in the natural habitat in Ishikawa.

Woeller, Richard L. THE EFFECT OF WEATHER ON THE MIGRATION OF SHOREBIRDS COMMON TO THE EASTERN SHORE OF LAKE ONTARIO. *Kingbird* 21(3): 117-129, 4 figs. July 1971. *WR 143: 72*
[G. Ray Bodley High School, Fulton, N.Y.] Different weather conditions were associated with migration through the eastern end of Lake Ontario during fall and spring.

Wolford, James W., and David A. Boag. FOOD HABITS OF BLACK-CROWNED NIGHT HERONS IN SOUTHERN ALBERTA. *Auk* 88(2): 435-437. Apr. 1971. *WR 143: 72*
[Univ. Alberta, Edmonton, Alberta, Canada.] A nesting colony of black-crowned night herons *(Nycticorax nycticorax)* fed chiefly on fish when these were available, but they were also quick to use other food when it was abundant.--Courtesy/ Paul A. Stewart.

SEABIRDS & THEIR ALLIES

Boyd, John C., and William J. L. Sladen. TELEMETRY STUDIES OF THE INTERNAL BODY TEMPERATURES OF ADÉLIE AND EMPEROR PENGUINS AT CAPE CROZIER, ROSS ISLAND, ANTARCTICA. *Auk* 88(2): 366-380, 6 figs. Apr. 1971. *WR 143: 72*
[Service Chasse et Pêche, Inst. Galli-Valério, 37 César-Roux, Lausanne, Switzerland.] Telemeters were implanted in abdominal cavities of birds for remote monitoring of body temperatures. Temperatures of Adélie penguins *(Pygoscelis adeliae)* varied from 38.4 to 39.4°C, depending on the season. Temperatures of two adult emperor penguins *(Aptenodytes forsteri)* were 38.4 and 38.7°C.--Courtesy/ Paul A. Stewart.

Brackbill, Hervey. HERRING AND RING-BILLED GULLS PAIRED OR COURTING IN MARYLAND IN JANUARY AND FEBRUARY. *Auk* 88(2): 438-440. Apr. 1971. *WR 143: 72*
[2620 Poplar Dr., Baltimore, Md.] Courtesy/ Paul A. Stewart.

Burger, Joanna. A METHOD FOR MARSH-TRAPPING BREEDING FRANKLIN'S GULLS. *Bird-Banding* 42(2): 123-124, 1 fig. Apr. 1971. *WR 143: 72*
[Univ. Minn., Minneapolis.] The birds enter an opening in the top of the cage placed over and around their nests and do not fly up to escape.--Courtesy/ Paul A. Stewart.

Delius, Juan D., and Gillian Thompson. BRIGHTNESS DEPENDENCE OF COLOUR PREFERENCES IN HERRING GULL CHICKS. *Z. Tierpsychol.* 27(7): 842-849. 1970. [From Biol. Abstr. 52(15), 1971. In English with German summ.] *WR 143: 72*
[Univ. Durham, Durham, England.]

Erwin, R. Michael. THE BREEDING SUCCESS OF TWO SYMPATRIC GULLS, THE HERRING GULL AND THE GREAT BLACK-BACKED GULL. *Wilson Bull.* 83(2): 152-158, 1 fig. June 1971. *WR 143: 73*

[Univ. R.I., Kingston.] Summary: The hatching success of the Great Black-backed Gull and two Herring Gull groups was significantly different. The "Control" Herring Gull group had the greatest success (82%) while the Black-Backs (44%) were least successful. "Experimental" Herring Gulls were intermediate having a 67% success. The Great Black-Backs laid eggs about two weeks earlier than either herring gull group. The mean laying interval was 22-25 April for Black-Backs and 7-10 May for both groups of Herring Gulls. Hatching success was somewhat dependent on the laying date of the eggs. In Black-Backs, "Late" layers had a higher hatching percentage than either "Early" or "Peak" egg layers. Conversely, "Late" laying Herring Gulls were less successful than "Early" layers (Experimental group) or "Peak" layers (Control group).--Courtesy/ Paul A. Stewart.

Goldman, Peter. HERRING GULL PREDATION ON COMMON WATER SNAKE IN LAKE ERIE. *Wilson Bull.* 83(2): 196-197. June 1971. *WR 143: 73*

[Ohio State Univ., Columbus.] A herring gull *(Larus argentatus)* captured a 3-ft. common water snake *(Natrix sipedon)*.--Courtesy/ Paul A. Stewart.

Gress, Franklin, Robert W. Risebrough, and Fred C. Sibley. SHELL THINNING IN EGGS OF THE COMMON MURRE, *URIA AALGE*, FROM THE FARALLON ISLANDS, CALIFORNIA. *Condor* 73(3): 368-369. Autumn 1971. *WR 143: 73*

[Bodega Marine Lab., P.O. Box 247, Bodega Bay, Calif.]

Grosjean, G., and A. Rappe. LA MOUETTE RIEUSE *(LARUS RIDIBUNDUS)* DANS L'EST DE LA PROVINCE DE LIÈGE. [LAUGHING GULLS *(LARUS RIDIBUNDUS)* IN EASTERN LIÈGE PROVINCE.] *Aves* 7(2): 44-52, illus. 1970. [From Biol. Abstr. 52(18), 1971. In French.] *WR 143: 73*

Harper, Charles A. BREEDING BIOLOGY OF A SMALL COLONY OF WESTERN GULLS *(LARUS OCCIDENTALIS WYMANI)* IN CALIFORNIA. *Condor* 73(3): 337-341, 3 figs. Autumn 1971. *WR 143: 73*

[Univ. Fla., Gainesville.] Information on the reproductive ecology of western gulls on Bird Rock, Santa Catalina Island, California, for 1965 and 1966.--From summ.

James-Veitch, Elden Aldis Thurbur Cole. THE ASHY PETREL, *OCEANODROMA HOMOCHROA*, AT ITS BREEDING GROUNDS ON THE FARALLON ISLANDS, CALIFORNIA. *Ph.D. thesis, Loma Linda Univ.* 387 p. 1970. [From Diss. Abstr. Int. B Sci. Eng. 32(2), 1971.] *WR 143: 73*

Leck, Charles F. NOCTURNAL HABITS OF RING-BILLED GULLS *(LARUS DELAWARENSIS)* AT THIMBLE SHOAL, VIRGINIA. *Chesapeake Sci.* 12(3): 188. Sept. 1971. *WR 143: 73*

[Rutgers Univ., New Brunswick, N.J.]

McDaniel, Travis H., and Theodore A. Beckett III. CASPIAN TERN NESTING IN SOUTH CAROLINA. *Chat* 35(2): 39-41, 2 figs. June 1971. *WR 143: 73*

New information of Caspian tern.--Courtesy/ Paul A. Stewart.

McNeil, Raymond, and Jean Burton. FIRST AUTHENTIC NORTH AMERICAN RECORD OF THE BRITISH STORM PETREL *(HYDROBATES PELAGICUS)*. *Auk* 88(3): 671-672. July 1971. *WR 143: 73*

[Univ. Montreal, C.P. 1628, Montreal, Quebec, Canada.] Courtesy/ Paul A. Stewart.

Mikkola, Kauri. IDENTIFICATION OF ALBINO HERRING GULLS *LARUS ARGENTATUS*. *Ornis Fenn.* 47(4): 172-176, illus. 1970. [From Biol. Abstr. 52(15), 1971. In English with Finnish summ.] *WR 143: 73*

[Univ. Helsinki, Helsinki, Finland.]

Peterson, Roger Tory, and George E. Watson. FRANKLIN'S GULL AND BRIDLED TERN IN SOUTHERN CHILE. *Auk* 88(3): 670-671. July 1971. *WR 143: 74*
[Old Lyme, Conn.] *"Larus pipixcan* and *Sterna anaethetus."* A range extension of approximately 1000 miles for the Franklin's gull.--Courtesy/ Paul A. Stewart.

Potts, G. R. MOULT IN THE SHAG *PHALACROCORAX ARISTOTELIS*, AND THE ONTOGENY OF THE "STAFFELMAUSER". *Ibis* 113(3): 298-305, 2 figs. 1971. *WR 143: 74*
[Game Conservancy Partridge Survival Project, North Farm, Washington, Pulborough, West Sussex, England.] There are three main types of plumage in the shag, the juvenal which is brown, the post-juvenal which is dark brown and the nuptial which is black-green. The replacement of these plumages and the ontogeny of the Staffelmauser was studied in a sample of 566 shags mainly from northeast England.--From summ.

Serventy, D. L. LONGEVITY RECORDS AND BANDING DATA ON SHORT-TAILED SHEARWATERS. *Australian Bird Bander* 8(3): 61-62. 1970. [From Bird-Banding 42(2), 1971.] *WR 143: 74*
Report of recapture of *Puffinus tenuirostris* after 22 years.

Shallenberger, Robert J., and J. Peterson Myers. FIRST NESTING RECORD FOR THE FRIGATEBIRD *(FREGATA MINOR)* IN THE MAIN HAWAIIAN ISLANDS. *Condor* 73(3): 385-386, 1 fig. Autumn 1971. *WR 143: 74*
[Oceanic Inst., Waimanalo, Oahu, Hawaii.]

Spellerberg, Ian F. ASPECTS OF McCORMICK SKUA BREEDING BIOLOGY. *Ibis* 113(3): 357-363, 1 fig. 1971. *WR 143: 74*
[La Trobe Univ., Bundoora, Victoria, Australia.] *"Catharacta maccormicki."*

Takara, Tetsuo. [SEABIRD COLONIES OF THE NAKANOGRAMI ISLAND, RYUKYUS.] *Misc. Rep. Yamashina's Inst. Ornithol.* 6(1/2): 188-194, illus. 1970. [From Biol. Abstr. 52(18), 1971. In Japanese with English summ.] *WR 143: 74*
[Fac. Agr., Univ. Ryukyus Shuri, Okinawa, Japan.]

Walmsley, J. G. UNE GLARÉOLE DE NORDMANN *GLAREOLA NORDMANNI* EN CAMARGUE, PREMIÈRE OBSERVATION ET PREMIER CAS DE NIDIFICATION POUR LE FRANCE. [A *GLAREOLA NORDMANNI* IN CAMARGUE, FIRST OBSERVATION AND FIRST CASE OF NESTING FOR FRANCE.] *Alauda* 38(4): 295-305, illus. 1970. [From Biol. Abstr. 52(13), 1971. In French with English summ.] *WR 143: 74*
[Sta. Biol. Tour du Valat, Le Sambuc, France.]

Watson, George E. MOLTING GREATER SHEARWATERS *(PUFFINUS GRAVIS)* OFF TIERRA DEL FUEGO. *Auk* 88(2): 440-442, 1 fig. Apr. 1971. *WR 143: 74*
[Smithsonian Inst., Washington, D.C.] The birds were molting in January.--Courtesy/ Paul A. Stewart.

HAWKS & OWLS

Balgooyen, Thomas G. PELLET REGURGITATION BY CAPTIVE SPARROW HAWKS *(FALCO SPARVERIUS)*. *Condor* 73(3): 382-385, 1 fig. Autumn 1971. *WR 143: 74*
[Univ. Calif., Berkeley.]

Beske, Alan, and John Champion. PROLIFIC NESTING OF SHORT-EARED OWLS ON BUENA VISTA MARSH. *Passenger Pigeon* 33(2): 99-103, illus. Summer 1971. *WR 143: 74*

Catling, Paul M. SPRING MIGRATION OF SAW-WHET OWLS AT TORONTO, ONTARIO. *Bird-Banding* 42(2): 110-114, 2 figs. Apr. 1971. *WR 143: 74*
[104 Victoria Park Ave., Toronto, Ontario, Canada.] Migration of saw-whet owls *(Aegolius acadicus)* started in late March, peaked in mid-April, and ended by late April.--Courtesy/ Paul A. Stewart.

Christensen, Steen, Bent Pors Nielsen, R. F. Porter, and Ian Willis. FLIGHT IDENTIFICATION OF EUROPEAN RAPTORS. *British Birds* 64(6): 247-266, 12 figs. + 6 pls. June 1971. *WR 143: 75*

Davis, Russell S. ANOTHER WHITE ONE. *Inland Bird Banding News* 42(6): 206-207. Nov.-Dec. 1970. *WR 143: 75*
[Clayton, Ill.] An observation of a "pure white" turkey vulture *(Cathartes aura)*.--Courtesy/ Paul A. Stewart.

Franke, Curt. [THE LITTLE OWL *(ATHENE NOCLUA* SCOPOLI) CATCHING MICE INDOORS.] *Rat Mais* (Wageningen) 17(2): 33. Dec. 1969. [From J. Mammal. 51(3, suppl.), 1970. In Dutch with English summ.] *WR 143: 75*

Greer, John Keever, and Richard L. Gilstrap. VERTEBRATE REMAINS IN BARN OWL PELLETS. *Bull. Okla. Ornithol. Soc.* 3(4): 25-29. Dec. 1970. [From J. Mammal. 52(1, suppl.), 1971.] *WR 143: 75*

Grier, James W. PRE-ATTACK POSTURE OF THE RED-TAILED HAWK. *Wilson Bull.* 83(2): 115-123, 2 figs. June 1971. *WR 143: 75*
[Cornell Univ., Ithaca, N.Y.] Experimental results indicated that prey animals were unable to distinguish between hungry and satiated red-tailed hawks *(Buteo jamaicensis)* before the hawks had initiated their actual attacks.--Courtesy/ Paul A. Stewart.

Hackman, C. Douglas, and Charles J. Henny. HAWK MIGRATION OVER WHITE MARSH, MARYLAND. *Chesapeake Sci.* 12(3): 137-141, 1 fig. Sept. 1971. *WR 143: 75*
[208A Donnybrook Lane, Towson, Md.] Abstract: The average number of hawks observed per hour in autumn migration between 1951-1954 and 1958-1961 at White Marsh, Maryland, was compared. The counts indicated that the status of the ten species observed may be divided into three categories: (1) relatively stable species (red-tailed hawk), (2) declining species (sparrow hawk, red-shouldered hawk, osprey, marsh hawk, and broad-winged hawk), and (3) rapidly declining species (peregrine falcon, Cooper's hawk, bald eagle, and sharp-shinned hawk). The findings from this study are in agreement with the available literature and the status of the populations appears to be related to the food habits of the species.

Halling-Sorensen, L. IDENTIFICATION DES RAPACES EN VOL (1re PARTIE). [IDENTIFICATION OF BIRDS OF PREY IN FLIGHT (1st PART).] *Aves* 7(2): 29-43, illus. 1970. [From Biol. Abstr. 52(18), 1971. In French.] *WR 143: 75*
[Tyge Krabbes Vej 11, DK 2300, Kobenhaun, Copenhagen, Denmark.]

Hickman, Gary L. ESCAPE RESPONSES AND SWIMMING ABILITIES OF NESTLING GOLDEN EAGLES. *Auk* 88(2): 427. Apr. 1971. *WR 143: 75*
[Bur. Sport Fish. & Wildl., 1031 Miracle Mile, Vero Beach, Fla.] Golden eagles *(Aquila chrysaetos)* paddled over the surface of the water of a river to safety after falling when frightened from their nest before they were old enough to be able to fly well.--Courtesy/ Paul A. Stewart.

Houston, C. Stuart. BROOD SIZE OF THE GREAT HORNED OWL IN SASKATCHEWAN. *Bird-Banding* 42(2): 103-105. Apr. 1971. *WR 143: 75*
[863 University Dr., Saskatoon, Saskatchewan, Canada.] During 17 years, a total of 1,374 young great horned owls were banded. Nesting success varied from year to year and from locality to locality. Largest broods were found in localities with best possibilities for finding food.--Courtesy/ Paul A. Stewart.

Leffler, Sanford R. THE JUNCO AS A FOOD ITEM FOR THE ROUGH-LEGGED HAWK IN ALASKA. *Wilson Bull.* 83(2): 196. June 1971. *WR 143: 75*
[Wash. State Univ., Pullman.] A report of the fifth American observation of a rough-legged hawk *(Buteo lagopus)* eating a bird.--Courtesy/ Paul A. Stewart.

Lukschanderl, Leopold. ZUR VERBREITUNG UND OEKOLOGIE DER GROSSTRAPPE *(OTIS TARDA L.)* IN OESTERREICH. [THE DISTRIBUTION AND ECOLOGY OF THE EUROPEAN GREAT BUSTARD *(OTIS TARDA L.)* IN AUSTRIA.] *J. Ornithol.* 112(1): 70-93, illus. 1971. [From Biol. Abstr. 52(16), 1971. In German with English summ.] *WR 143: 76*
[Inst. Vgl. Verhaltensforschung, Oesterreichischen Akad. Wiss., Vienna, Austria.]

Morse, Douglass H. GREAT HORNED OWLS AND NESTING SEABIRDS. *Auk* 88(2): 426-427. Apr. 1971. *WR 143: 76*
[Univ. Md., College Park.] Great horned owls *(Bubo virginianus)* were observed on unforested Thief Island in Muscongus Bay, Maine, where they came to feed, presumably from forested Killick Stone Island about 0.4 km away.--Courtesy/ Paul A. Stewart.

Mrosovsky, N. BLACK VULTURES ATTACK LIVE TURTLE HATCHLINGS. *Auk* 88(3): 672-673, 1 fig. July 1971. *WR 143: 76*
[Univ. Toronto, Toronto, Ontario, Canada.] Black vultures *(Coragyps atratus)* were found feeding on leatherback turtles *(Dermochelys coriacea)* hatching in the daytime.--Courtesy/ Paul A. Stewart.

Palokangas, Risto, Juhani Koivusaari, and Ismo Nuuja. MERENKURKUN ALUEEN MERIKOTKAKANTA 1960-LUVULLA. [INCIDENCE OF THE WHITE-TAILED EAGLE IN THE REGION OF THE QUARKEN STRAITS IN THE 1960's.] *Ornis Fenn.* 47(4): 180-184. 1970. [From Biol. Abstr. 52(16), 1971. In Finnish with English summ.] *WR 143: 76*
The numbers of white-tailed eagles in the Quarken Straits region, their breeding success and reasons for their reduction are discussed.

Rockenbauch, Dieter. DIE ERNÄHRUNG SÜEDWESTDEUTSCHER WANDERFALKEN *(FALCO PEREGRINUS)*. [THE FOOD OF SOUTHWEST GERMAN PEREGRINE FALCONS *(FALCO PEREGRINUS)*.] *J. Ornithol.* 112(1): 43-60, illus. 1971. [From Biol. Abstr. 52(16), 1971. In German with English summ.] *WR 143: 76*
[Arbeitsgem. Wanderfalkenschutz, Baden-Württemberg, Germany.]

Sardou, R., and E. Pascaud. NOUVELLES DONNÉES SUR L'AIGLE BOTTÉ *HIERAAETUS PENNATUS* (GM.) DANS LA RÉGION DE GAILLAC (TARN). [NEW DATA ON THE BOOTED EAGLE *HIERAAETUS PENNATUS* (GM.) IN THE GAILLAC REGION (TARN DEPARTMENT).] *Alauda* 38(4): 286-289. 1970. [From Biol. Abstr. 52(13), 1971. In French.] *WR 143: 76*
[Toulouse, France.] A 1966 observation of a newly-hatched eaglet, and the behavior of its parents toward the ornithological team, is reported.

Scharf, William C., and Edward Balfour. GROWTH AND DEVELOPMENT OF NESTLING HEN HARRIERS. *Ibis* 113(3): 323-329, 2 figs. 1971. *WR 143: 76*
[Northwestern Mich. Coll., Traverse City.] *"Circus cyaneus."*

Sindelar, Charles, Jr. WISCONSIN OSPREY SURVEY / REPORT OF THE WSO RESEARCH COMMITTEE. *Passenger Pigeon* 33(2): 79-88, 1 fig. Summer 1971. *WR 143: 76*
The Wisconsin osprey population is declining at a rate of 15 to 20% per year and is unable to maintain itself at present reproductive rates. Chlorinated hydrocarbons are probably responsible for the low reproductive success of the osprey in Wisconsin.--From summ.

Wobus, U., and G. Creutz. EINE ERFOLGREICHE MISCHBRUT VON ROTUND SCHWARZ-MILAN *(MILVUS MILVUS X MILVUS MIGRANS)*. [A SUCCESSFUL MIXED BROOD OF RED AND BLACK KITE *(MILVUS MILVUS X MILVUS MIGRANS)*.] *Zool. Abh.* (Dresden) 31. p. 305-313, illus. 1970. [From Biol. Abstr. 52(17), 1971. In German.] *WR 143: 76*
[Inst., Kulturpflanzenforsch., D.A.L. Gatersfeben, Germany.]

Wuttky, K. ERGEBNISSE 10JÄHRIGER BEOBACHTUNGEN AN DER GREIFVOGELPOPULATION DES WILDFORSCHUNGSGEBIETES HAKEL (KR. ASCHERSLEBEN). [RESULTS OF TEN YEARS OBSERVATION OF PREDATORY BIRD POPULATIONS AT THE HAKEL WILDLIFE RESEARCH AREA (ASCHERSLEBEN).] *Beitr. Jagd.-Wildforsch.* (Berlin) 10: 159-173. 1968. [From J. Mammal. 51(2, suppl.), 1970. In German.] *WR 143: 77*

Yalden, D. W., and R. Jones. THE FOOD OF SUBURBAN TAWNY OWLS. *Naturalist* (Leeds) 914: 87-90. July-Sept. 1970. [From J. Mammal. 52(1, suppl.), 1971.] *WR 143: 77*

BLACKBIRDS, STARLINGS, CROWS

Balda, Russell P., and Gary C. Bateman. FLOCKING AND ANNUAL CYCLE OF THE PIÑON JAY, *GYMNORHINUS CYANOCEPHALUS*. *Condor* 73(3): 287-302, 5 figs. Autumn 1971. *WR 143: 77*

[Northern Ariz. Univ., Flagstaff.] The activities of a flock of piñon jays, *Gymnorhinus cyanocephalus*, and its members throughout the different periods of the year, are described. The flock spent much of the study time in an unusual habitat, Ponderosa Pine Forest.

Brown, Jerram L. AN EXPLORATORY STUDY OF VOCALIZATION AREAS IN THE BRAIN OF THE REDWINGED BLACKBIRD *(AGELAIUS PHOENICEUS)*. *Behaviour* 39(2-4): 91-127, 29 figs. 1971. In English with German summ. *WR 143: 77*

[Univ. Rochester, Rochester, N.Y.]

Burtt, Harold E., and Maurice L. Giltz. TOPOPHILIA IN GRACKLES. *Inland Bird Banding News* 42(6): 203-205. Nov.-Dec. 1970. *WR 143: 77*

[Ohio State Univ., Columbus.] Topophilia, or the tendency to return to the banding place, occurred significantly more often in common grackles *(Quiscalus quiscula)* than in brown-headed cowbirds *(Molothrus ater)*, red-winged blackbirds *(Agelaius phoeniceus)*, and starlings *(Sturnus vulgaris)*.--Courtesy/ Paul A. Stewart.

Chamberlain, Dwight R., and George W. Cornwell. SELECTED VOCALIZATIONS OF THE COMMON CROW. *Auk* 88(3): 613-634, 7 figs. July 1971. *WR 143: 77*

[Univ. Md., College Park.] The environmental and behavioral contexts associated with 23 distinct vocalizations of the common crow *(Corvus brachyrhynchos)* are described.--Courtesy/ Paul A. Stewart.

Darley, James A. SEX RATIO AND MORTALITY IN THE BROWN-HEADED COWBIRD. *Auk* 88(3): 560-566. July 1971. *WR 143: 77*

[St. Mary's Univ., Halifax, Nova Scotia, Canada.] The breeding population of brown-headed cowbirds *(Molothrus ater)* was composed of 37% adult males, 18% adult females, 22% yearling females, and 23% yearling males, indicating a higher mortality rate among adult females than males.--Courtesy/ Paul A. Stewart.

Francis, William J. AN EVALUATION OF REPORTED REPRODUCTIVE SUCCESS IN RED-WINGED BLACKBIRDS. *Wilson Bull.* 83(2): 178-185. June 1971. *WR 143: 77*

[P.O. Box 2097, Sandusky, Ohio.] There were significant differences in nesting success of red-winged blackbirds *(Agelaius phoeniceus)* correlated with years, localities, ecological habitats, and vegetational forms.--Courtesy/ Paul A. Stewart.

Friedmann, Herbert. FURTHER INFORMATION ON THE HOST RELATIONS OF THE PARASITIC COWBIRDS. *Auk* 88(2): 239-255. Apr. 1971. *WR 143: 77*

[Los Angeles County Mus. Natur. Hist., Los Angeles, Calif.] Mostly involves additions to list of hosts used by brown-headed cowbird *(Molothrus ater)*, shiny cowbird *(M. bonariensis)*, and bronzed cowbird *(M. aeneus)*.--Courtesy/ Paul A. Stewart.

Hunter, Maxwell W. III, and Alan C. Kamil. OBJECT-DISCRIMINATION LEARNING SET AND HYPOTHESIS BEHAVIOR IN THE NORTHERN BLUEJAY *(CYANOCITTA CRISTATA)*. *Psychonomic Sci. Sect. Anim. Physiol. Psychol.* 22(5): 271-273, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 78*
[Univ. Mass., Amherst.]

Jackson, Jeffrey James. NESTING ECOLOGY OF THE FEMALE REDWINGED BLACKBIRD *(AGELAIUS PHOENICEUS PHOENICEUS)*. *Ph.D. thesis, Ohio State Univ.* 152 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 78*
Report on the frequency of renesting, local movements, and replacement by new individuals of female redwinged blackbirds whose nests were destroyed.

Kok, O. B. EXPERIENCE IN BANDING BOAT-TAILED GRACKLES. *Bird-Banding* 42(2): 106-109. Apr. 1971. *WR 143: 78*
[Univ. Orange Free State, P.O. Box 339, Bloemfontein, South Africa.] Twenty-six boat-tailed grackles *(Cassidix mexicanus)* were captured after eating food treated with alpha-chloralose.--Courtesy/ Paul A. Stewart.

Kok, O. B. VOCAL BEHAVIOR OF THE GREAT-TAILED GRACKLE *(QUISCALUS MEXICANUS PROSOPIDICOLA)*. *Condor* 73(3): 348-363, 10 figs. Autumn 1971. *WR 143: 78*
[Univ. Orange Free State, P.O. Box 339, Bloemfontein, South Africa.]
Summary: Vocalizations of the Great-tailed Grackle *(Quiscalus mexicanus prosopidicola)* are described, with the aid of spectrograms, and interpreted in terms of causation and function. The importance of vocal sounds in individual recognition, as well as the diurnal and seasonal cycles of vocalizations, are discussed.

Laux, Louis Joseph, Jr. NON-BREEDING SURPLUS AND POPULATION STRUCTURE OF THE RED-WINGED BLACKBIRD *(AGELAIUS PHOENICEUS)*. *Ph.D. thesis, Univ. Mich.* 85 p. 1970. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 78*

Long, Claudine F. COMMON GRACKLES PREY ON BIG BROWN BAT. *Wilson Bull.* 83(2): 196. June 1971. *WR 143: 78*
[Wis. State Univ., Stevens Point.] A common grackle *(Quiscalus quiscula)* carried a big brown bat *(Eptesicus fuscus)* in its beak.--Courtesy/ Paul A. Stewart.

Michael, Edwin D. STARLINGS NESTING IN ROCKY CLIFFS. *Bird-Banding* 42(2): 123. Apr. 1971. *WR 143: 78*
[W. Va. Univ., Morgantown.] Starlings *(Sturnus vulgaris)* were observed feeding young in nests in cavities on rock faces formed in highway construction.--Courtesy/ Paul A. Stewart.

Prescott, Kenneth W. UNUSUAL ACTIVITY OF STARLINGS AT YELLOW-SHAFTED FLICKER NEST. *Wilson Bull.* 83(2): 195-196. June 1971. *WR 143: 78*
[N.J. State Mus., Trenton.] Starlings *(Sturnus vulgaris)* fed yellow-shafted flickers *(Colaptes auratus)* in a nest in a tree some 75 feet from the tree containing the starling's nest. The starlings also removed fecal material from flicker's nest.--Courtesy/ Paul A. Stewart.

Rodrick, Gary E., and John C. Johnson, Jr. HELMINTHS OF THE STARLING *STURNUS VULGARIS* L. FROM SOUTHEASTERN KANSAS. *Trans. Amer. Microsc. Soc.* 90(2): 253-254. 1971. [From Biol. Abstr. 52(15), 1971.] *WR 143: 78*
[Univ. Okla., Norman.]

Russell, Dennis N. FOOD HABITS OF THE STARLING IN EASTERN TEXAS. *Condor* 73(3): 369-372, 2 figs. Autumn 1971. *WR 143: 78*
[Texas Parks & Wildl. Dep., Austin.]

Seuter, F. IST EINE ENDOZOISCH VERBREITUNG DER TOLLKIRSCHE DURCH AMSEL UND STAR MOGLICH? [IS AN ENDOZOIC DISPOSAL OF ATROPINE BY BLACKBIRDS AND STARLINGS POSSIBLE?] *Zool. Jb. Physiol.* 75(2): 342-359. 1970. [From Bird-Banding 42 (2), 1971. In German with English summ.] *WR 143: 79*

Smith, Douglas Graham. THE ROLE OF EPAULETS IN THE RED-WINGED BLACKBIRD, *AGELAIUS PHOENICEUS*, SOCIAL SYSTEMS. *Ph.D. thesis, State Univ. N.Y.* (Stony Brook). 54 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 79*

Stork, Hans-Jurgen. ZUR SOZIALEN FUNKTION DES GESANGES DER AMSEL *TURDUS MERULA* L. [SOCIAL FUNCTION OF THE SONG OF THE BLACKBIRD *TURDUS MERULA* L.] *Z. Tierpsychol.* 28(1): 54-58, illus. 1971. [From Biol. Abstr. 52(13), 1971. In German with English summ.] *WR 143: 79*
[Pettenkoferst. 11, Anat. Inst., Munich, Germany.]

Tenovuo, Rauno, and Risto Lemmetyinen. ON THE BREEDING ECOLOGY OF THE STARLING *STURNUS VULGARIS* IN THE ARCHIPELAGO OF SOUTHWESTERN FINLAND. *Ornis Fenn.* 47(4): 159-166. 1970. [From Biol. Abstr. 52(15), 1971. In English with Finnish summ.] *WR 143: 79*
[Univ. Turku, Turku, Finland.]

Verbeek, Nicolaas Antonius Maria. THE EXPLOITATION SYSTEM OF THE YELLOW-BILLED MAGPIE *(PICA NUTTALLI)*. *Ph.D. thesis, Univ. Calif.* (Berkeley). 170 p. 1970. [From Diss. Abstr. Int. B Sci. Eng. 32(2), 1971.] *WR 143: 79*
Ecological and behavioral adaptations in the annual cycle of the yellow-billed magpie.

Witty, D. R., and L. P. Elliott. *STAPHYLOCOCCUS AUREUS* ISOLATED FROM THE INTESTINAL TRACT OF STARLINGS. *Ky. Warbler* 47(3): 35-37. Aug. 1971. *WR 143: 79*
[Western Ky. Univ., Bowling Green.] Starlings can harbor *S. aureus* in their intestinal tracts thus being vectors in transmission of the organism. *S. aureus* survives in deposited fecal material.

OTHER BIRDS

Aubry, J. LES DÉPLACEMENTS DU BOUVREUIL PIVOINE *PYRRHULA PYRRHULA* (L.) EN FRANCE. [MOVEMENTS OF THE BULLFINCH *PYRRHULA PYRRHULA* (L.) IN FRANCE.] *Ann. Zool. Ecol. Anim.* 2(4): 509-522. 1970. [From Biol. Abstr. 52(15), 1971. In French with English summ.] *WR 143: 79*
[Lab. Petits Vertebr., Cent. Nat. Rech., Jouy-en-Josas, France.]

Balát, František. CLUTCH SIZE IN THE GREAT TIT, *PARUS MAJOR* LINN., IN PINE FORESTS OF SOUTHERN MORAVIA. *Zool. Listy* 19(4): 321-331. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 79*
[Inst. Vertebr. Zool., Czech. Acad. Sci., Brno, Czechoslovakia.]

Becking, J. H. THE BREEDING OF *COLLOCALIA GIGAS*. *Ibis* 113(3): 330-334 + 1 pl. 1971. *WR 143: 79*
[Posbus 48, Wageningen, Netherlands.]

Beenen, Hans. SIEDLUNGSDICHTE-UNTERSUCHUNGEN AN RAUCHSCHWALBEN *(HIRUNDO RUSTICA)* UND MAHLSCHWALBEN *(DELICHON URBICA)* IN SOLINGEN-OHLIGS IN DEN JAHREN 1966, 1967 UND 1968. [STUDIES OF THE POPULATION DENSITY OF SWALLOWS *(HIRUNDO RUSTICA)* AND HOUSE MARTINS *(DELICHON URBICA)* IN SOLINGEN-OHLIGS (GERMANY) IN 1966, 1967 AND 1968.] *Angew. Ornithol.* 3(3): 118-122. 1970. [From Biol. Abstr. 52(17), 1971. In German.] *WR 143: 79*
[Wahnenkamp 6, Solingen-Ohligs, Germany.]

Berlioz, Jacques, and Jean Roche. NOTE SUR LE *CERCOMELA SPECTATRIX* CLARKE ET DESCRIPTION D'UNE SOUS-ESPÈCE NOUVELLE. [NOTE ON *CERCOMELA SPECTATRIX* CLARKE AND DESCRIPTION OF A NEW SUBSPECIES.] *Monit. Zool. Ital.* suppl. 3(12): 267-271. 1970. [From Biol. Abstr. 52(13), 1971. In French.] *WR 143: 80*
[Mus. Nat. Hist. Natur., Paris, France.]

Boecker, Maximilian. DIE INVASION DES TANNENHAEHERS *(NUCIFRAGA CARYOCATACTES)* IM JAHRE 1968 IN NORDRHEIN-WESTFALEN (EINSCHLIESSLICH DER GEBIETE SUEDLICH BIS MOSEL UND LAHN). [THE INVASION OF THE NUTCRACKER *(NUCIFRAGA CARYOCATACTES)* IN 1968 IN THE NORTHERN RHINELAND AND WESTPHALIA (INCLUDING THE AREA SOUTH OF THE MOSEL AND LAHN RIVERS).] *Bonn. Zool. Beitr.* 21(3/4): 183-236, illus. 1970. [From Biol. Abstr. 52(17), 1971. In German with English summ.] *WR 143: 80*
[Ornithol. Abt., Mus. A. Koenig, Bonn, Germany.]

Borror, Donald J. SONGS OF *AIMOPHILA* SPARROWS OCCURRING IN THE UNITED STATES. *Wilson Bull.* 83(2): 132-151, 112 figs. June 1971. *WR 143: 80*
[Ohio State Univ., Columbus.] The songs of Bachman's sparrows *(Aimophila aestivalis)*, rufous-winged sparrows *(A. carpalis)*, and Botteri's sparrows *(A. botterii)* are somewhat similar, but there is little similarity between these species and Cassin's, rufous-crowned, and five-striped sparrows *(A. cassinii, A. ruficeps,* and *A. quinquestriata)*. The six species differ in the size of individual repertoires, the way the repertoires are used, the occurrence of identical songs by individuals, and the singing rate.--Courtesy/ Paul A. Stewart.

Brooke, R. K. TAXONOMIC AND DISTRIBUTIONAL NOTES ON THE AFRICAN CHAETURINI. *Bull. British Ornithol. Club* 91(3): 76-79. 1971. *WR 143: 80*

Calder, William A. TEMPERATURE RELATIONSHIPS AND NESTING OF THE CALLIOPE HUMMINGBIRD. *Condor* 73(3): 314-321, 3 figs. Autumn 1971. *WR 143: 80*
[Univ. Ariz., Tucson.] The calliope hummingbird, smallest bird in North America, incubates eggs in nocturnal temperatures approaching freezing. Small egg size and large heat loss potentials are not compensated by adaptive modification in the duration of incubation and brooding, the "per cent inattentiveness," the metabolic cost of activity, or the nocturnal body temperatures. Nest sites and construction minimizing heat loss are indicated as major factors in the thermal success of the nesting calliope hummingbird.--From summ.

Churchill, D. M., and P. Christensen. OBSERVATIONS ON POLLEN HARVESTING BY BRUSH-TONGUED LORIKEETS. *Australian J. Zool.* 18(4): 427-437, illus. 1970. [From Biol. Abstr. 52(13), 1971.] *WR 143: 80*
[Monash Univ., Clayton, Victoria, Australia.] *"Glossopsitta porphyracephala."*

Demaret, P. PRESENCE DU TRAQUET TARIER *(SAXICOLA RUBETRA)* ET DU BRUANT DES ROSEAUX *(EMBERIZA SCHOENICLUS)* DANS LES MILIEUX HUMIDES DE L'ARDENNE ORIENTALE. [PRESENCE OF WHINCHATS *(SAXICOLA RUBETRA)* AND OF REED BUNTINGS *(EMBERIZA SCHOENICLUS)* IN THE HUMID ENVIRONMENT OF EASTERN ARDENNES.] *Aves* 6(6): 173-179, illus. 1969. [From Biol. Abstr. 52(18), 1971. In French.] *WR 143: 80*
[Rue Chateau Massart, 56, Liege, Belgium.]

Feduccia, J. A. NATURAL HISTORY OF THE AVIAN FAMILIES DENDROCOLAPTIDAE (WOODHEWERS) AND FURNARIIDAE (OVENBIRDS). *J. Grad. Res. Center, South. Meth. Univ.* 38: 1-26. 1970. [From Bird-Banding 42(2), 1971.] *WR 143: 80*
[Univ. N.C., Chapel Hill.]

Feduccia, J. Alan. *TURDUS GRAYI* FEEDING ON SNAKE. *Wilson Bull.* 83(2): 197. June 1971. *WR 143: 80*
[Univ. N.C., Chapel Hill.] Courtesy/ Paul A. Stewart.

Finlay, J. C. POST-BREEDING NEST CAVITY DEFENSE IN PURPLE MARTINS. *Condor* 73(3): 381-382, 1 fig. Autumn 1971. *WR 143: 81*
[Edmonton, Alberta, Canada.]

Flieg, G. Michael. VESTIGIAL ERECTILE CREST IN *PICATHARTES*. *Auk* 88(2): 442. Apr. 1971. *WR 143: 81*
[Chicago Zool. Park, Brookfield, Ill.] Involves Guinea bare-headed rock fowl *(Picathartes gymnocephalus)*.--Courtesy/ Paul A. Stewart.

Folk, Čestmír, and Ivo Novotný. VARIATION IN BODY WEIGHT AND WING LENGTH IN THE HOUSE SPARROW, *PASSER DOMESTICUS* L., IN THE COURSE OF A YEAR. *Zool. Listy* 19(4): 333-342, illus. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 81*
[Inst. Vertebr. Zool., Czech. Acad. Sci., Brno, Czechoslovakia.]

Forshaw, Joseph M. STATUS OF *LORIUS AMABILIS* STRESEMANN. *Bull. British Ornithol. Club* 91(3): 64-76, 2 figs. 1971. *WR 143: 81*

Frische, O. von. ZUR BRUTBIOLOGIE UND ZUCHT DES SPIESSFLUGHUHNS *(PTEROCLES ALCHATA)* IN GEFANGENSCHAFT. [THE BREEDING BIOLOGY OF THE PINTAILED SANDGROUSE IN CAPTIVITY.] *J. Ornithol.* 111(2): 189-195. 1970. [From Bird-Banding 42(2), 1971. In German.] *WR 143: 81*

Georg, P. V., and Mohammed Al-Rawy. GROWTH STUDIES ON NESTLINGS OF COMMON SWALLOW *HIRUNDO RUSTICA RUSTICA*. *Bull. Iraq Natur. Hist. (Univ. Baghdad)* 4(2/3/4): 3-20, illus. 1970. [From Biol. Abstr. 52(14), 1971. In English with Arabic summ.] *WR 143: 81*
[Coll. Educ., Univ. Baghdad, Baghdad, Iraq.]

Gonzales, Rodolfo B., and Angel C. Alcala. THE FORAGING DEPLOYMENT OF VELVET-FRONTED NUTHATCHES AND ELEGANT TITMICE. *Silliman J.* 16(4): 402-408. 1969. [From Biol. Abstr. 52(18), 1971.] *WR 143: 81*
[Silliman Univ., Dumaguete City, Phillipines.]

Gorski, Leon J. TRAILL'S FLYCATCHERS OF THE "FEE-BEE-O" SONGFORM WINTERING IN PERU. *Auk* 88(2): 429-431. Apr. 1971. *WR 143: 81*
[Central Conn. State Coll., New Britain.] *"Empidonax traillii."*--Courtesy/ Paul A. Stewart.

Gronlund, Seppo, Juhani Itamies, and Heimo Mikkola. ON THE FOOD AND FEEDING HABITS OF THE GREAT GREY SHRIKE *LANIUS EXCUBITOR* IN FINLAND. *Ornis Fenn.* 47 (4): 167-171. 1970. [From Biol. Abstr. 52(16), 1971. In English with Finnish summ.] *WR 143: 81*
[Univ. Oulu, Oulu, Finland.]

Guettinger, Hans Rudolf. ZUR EVOLUTION VON VERHALTENSWEISEN UND LAUTAEUSSERUNGEN BEI PRACHTFINKEN (ESTRILDIDAE). [ON THE EVOLUTION OF BEHAVIOR PATTERNS AND VOCALIZATIONS IN ESTRILDID FINCHES.] *Z. Tierpsychol.* 27(9): 1011-1075, illus. 1970. [From Biol. Abstr. 52(16), 1971. In German with English summ.] *WR 143: 81*
[Zool. Mus., Univ., Zurich, Germany.] A comparative analysis is presented of the behavior patterns and vocalizations of various species of *Odontospiza, Spermestes, Euodice* and *Lonchura*.

Haverschmidt, F. NOTES ON THE LIFE HISTORY OF THE RUSTY-MARGINED FLYCATCHER IN SURINAM. *Wilson Bull.* 83(2): 124-128, 1 fig. June 1971. *WR 143: 81*
[16 Wolfskuilstraat, Ommen, Holland.] Information on voice, territory, breeding season, nest building, egg laying, clutch size, incubation period, nestling period, number of broods per year, and predation for the rusty-margined flycatcher *(Myiozetetes cayanensis)*.--Courtesy/ Paul A. Stewart.

Heintzelman, Donald S., and Robert MacClay. AN EXTRAORDINARY AUTUMN MIGRATION OF WHITE-BREASTED NUTHATCHES. *Wilson Bull.* 83(2): 129-131. June 1971. *WR 143: 82*
[N.J. State Mus., Trenton.] In eastern Pennsylvania, migrating waves of white-breasted nuthatches *(Sitta carolinensis)* closely paralleled in time and numbers the waves of red-breasted nuthatches *(S. canadensis)*.--Courtesy/ Paul A. Stewart.

Hibbard, Edmund A., and Paul D. Kline. NESTING OF BELL'S VIREO IN NORTH DAKOTA. *Wilson Bull.* 83(2): 202-203. June 1971. *WR 143: 82*
[N. Dak. State Univ., Fargo.] Courtesy/ Paul A. Stewart.

Jadin, B., and A. Demaret. A PROPOS DU COMPORTEMENT AGRESSIF DU MOINEAU DOMESTIQUE *(PASSER DOMESTICUS)* A L'EGARD DES TOURTELLES TURQUES *(STREPTOPELIA DECAOCTO)*. [ABOUT THE AGGRESSIVE BEHAVIOR OF THE HOUSE SPARROW *(PASSER DOMESTICUS)* TOWARDS THE TURKISH TURTLEDOVE *(STREPTOPELIA DECAOCTO)*.] *Aves* 6(6): 179-182. 1969. [From Biol. Abstr. 52(18), 1971. In French.] *WR 143: 82*
[Tournant Saint-Paul, 6, Liege, Belgium.]

Jehl, Joseph R., Jr. THE STATUS OF *CARPODACUS MCGREGORI*. *Condor* 73(3): 375-376. Autumn 1971. *WR 143: 82*
[Natur. Hist. Mus., San Diego, Calif.]

Johnson, E. D. H. OBSERVATIONS ON A RESIDENT POPULATION OF STONECHATS IN JERSEY. [Part II.] *British Birds* 64(6): 267-279 + 8 pls. June 1971. *WR 143: 82*
[The Museum, St. Helier, Jersey, Channel Islands.] *"Saxicola torquata."* See *WR 142: 100* for part I.

Johnson, E. D. H. WINTERING OF *SAXICOLA TORQUATA* IN THE ALGERIAN SAHARA. *Bull. British Ornithol. Club* 91(4): 103-107, 1 fig. Aug. 1971. *WR 143: 82*
[The Museum, St. Helier, Jersey, Channel Islands.]

Johnston, Richard F., and Robert K. Selander. EVOLUTION IN THE HOUSE SPARROW: II. ADAPTIVE DIFFERENTIATION IN NORTH AMERICAN POPULATIONS. *Evolution* 25(1): 1-28, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 82*
[Mus. Natur. Hist., Univ. Kans., Lawrence.]

Jost, Otto. ERFOLGREICHE SCHUTZMASSNAHMEN IN DEN BRUTREVIEREN DER WASSERAMSEL *(CINCLUS CINCLUS)*. [SUCCESSFUL PROTECTIVE MEASURES IN THE NESTS OF THE DIPPER *(CINCLUS CINCLUS)*.] *Angew. Ornithol.* 3(3): 101-108, illus. 1970. [From Biol. Abstr. 52(17), 1971. In German with English summ.] *WR 143: 82*
[Ederstrasse 6, Fulda, Germany.]

Kilham, Lawrence. REPRODUCTIVE BEHAVIOR OF YELLOW-BELLIED SAPSUCKERS. I. PREFERENCE FOR NESTING IN *FOMES*-INFECTED ASPENS AND NEST HOLE INTERRELATIONS WITH FLYING SQUIRRELS, RACCOONS, AND OTHER ANIMALS. *Wilson Bull.* 83(2): 159-171, 3 figs. June 1971. *WR 143: 82*
[Dartmouth Med. School, Hanover, N.H.] Yellow-bellied sapsuckers *(Sphyrapicus varius)* may select trees with straight trunks 20-25 cm in diameter. Such trees offer maximum protection from raccoon predation. Sapsuckers excavate new cavities in the same tree for successive nests more often than other woodpeckers.--Courtesy/ Paul A. Stewart.

Kleinschmidt, O. DAS VARIIEREN DER FLUEGELLAENGE BEIM STACHELSCHWANZSEGLER (AVES, APODIDAE). [THE VARIATION OF LENGTH OF WINGS IN *CHAETURA CAUDACUTA* (AVES, APODIDAE).] *Zool. Abh.* (Dresden) 31. p. 9-10. 1970. [From Biol. Abstr. 52(17), 1971. In German.] *WR 143: 82*

Koepcke, Maria. *ZONOTRICHIA CAPENSIS MARKLI* NOV. SUBSPEC. (FRINGILLIDAE, AVES), UNA RAZA GEOGRAFICA NUEVA DEL GORRION AMERICANO DE LA COSTA NORTE DEL PERU. [*ZONOTRICHIA CAPENSIS MARKLI* NOV. SUBSPEC. (FRINGILLIDAE, AVES), A NEW GEOGRAPHIC RACE OF AMERICAN SPARROW FROM THE NORTHERN COAST OF PERU.] *Publ. Mus. Hist. Natur. Javier Prado Ser. A Zool.* (23): 1-11, illus. 1971. [From Biol. Abstr. 52(17), 1971. In Spanish.] *WR 143: 83*

[Sec. Aves & Mamiferos Mus. Hist. Natur., "Javier Prado", Apart. 1109, Lima, Peru.] A new geographical race of the rufous-collared sparrow, *Z. capensis markli*, is described.

Kroodsma, Donald E. SONG VARIATIONS AND SINGING BEHAVIOR IN THE RUFOUS-SIDED TOWHEE, *PIPILO ERYTHROPHTHALMUS OREGONUS*. *Condor* 73(3): 303-308, 2 figs. Autumn 1971. *WR 143: 83*

[Oreg. State Univ., Corvallis.] A male rufous-sided towhee may have nine song types. Songs of neighboring birds are similar, but change structure over distance. Individuals are capable of responding similarly to song types. This behavior is typical of passerine species in which young males learn songs and perpetuate local or dialect patterns.--From summ.

Kroodsma, Roger Lee. NORTH DAKOTA SPECIES PAIRS. I. HYBRIDIZATION IN BUNTINGS, GROSBEAKS, AND ORIOLES. II. SPECIES-RECOGNITION BEHAVIOR OF TERRITORIAL MALE ROSE-BREASTED AND BLACK-HEADED GROSBEAKS *(PHEUCTICUS)*. *Ph.D. thesis, N. Dak. State Univ.* 185 p. 1970. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 83*

Landau, David. DIETARY INFLUENCES ON ADIPOSE TISSUE COMPOSITION IN THE MIGRATORY INDIGO BUNTING *(PASSERINA CYANEA)*. *Ph.D. thesis, Univ. Fla.* 72 p. 1970. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 83*

Lemon, Robert E. DIFFERENTIATION OF SONG DIALECTS IN CARDINALS. *Ibis* 113 (3): 373-377, 3 figs. 1971. *WR 143: 83*

[McGill Univ., Montreal, Quebec, Canada.]

Lemon, Robert E., and Christopher Chatfield. ORGANIZATION OF SONG IN CARDINALS. *Anim. Behav.* 19(1): 1-17, 6 figs. Feb. 1971. *WR 143: 83*

[McGill Univ., Montreal, Quebec, Canada.] Abstract: North American birds known as cardinals have a repertoire of several distinctive song types, each consisting of repetitions of sound patterns called syllables. Through the use of statistical models, this paper considers the rules by which this behaviour is organized. Included are considerations of the factors determining the repetitions of the syllables in the songs, the repetitions of the songs in series or bouts, the associations of different types of syllables within the songs and the associations between the different song types. An attempt is made to interpret the organization of the repertoire in terms of conflicting tendencies for facilitation and inhibition.

Martin, Robert F. THE CAÑON WREN *(CATHERPES MEXICANUS)* RAIDING FOOD STORAGE OF A TRYPOXYLID WASP. *Auk* 88(3): 677. July 1971. *WR 143: 83*

[Univ. Tex., Austin.] Cañon wrens removed spiders from nests of mud-dauber wasps *(Sceliphron cementarium)* before the cells were sealed.--Courtesy/ Paul A. Stewart.

McGrew, Albert D. NESTING OF THE RINGED KINGFISHER IN THE UNITED STATES. *Auk* 88(3): 665-666. July 1971. *WR 143: 83*

[410 N. Main St., McAllen, Tex.] *"Megaceryle torquata."*--Courtesy/ Paul A. Stewart.

Meanley, Brooke. ADDITIONAL NOTES ON PRE-NESTING AND NESTING BEHAVIOR OF THE SWAINSON'S WARBLER. *Wilson Bull.* 83(2): 194. June 1971. *WR 143: 83*

[Patuxent Wildl. Res. Center, Laurel, Md.] Copulatory behavior of the Swainson's warbler *(Limnothlypis swainsonii)* is described. Nests of Swainson's warblers were constructed only by females, working mostly in the forenoon. The incubation period was 13 days.--Courtesy/ Paul A. Stewart.

Miller, Richard S., and Richard Elton Miller. FEEDING ACTIVITY AND COLOR PREFERENCE OF RUBY-THROATED HUMMINGBIRDS. *Condor* 73(3): 309-313. Autumn 1971. *WR 143: 84*

[Yale Univ., New Haven, Conn.] Hummingbirds are more strongly influenced by a food source's location than by its color. Color may act as a discriminator stimulus, but there is no evidence that they have an innate, or strongly developed, preference for one color.--From discussion.

Muller, Kerry A. PHYSICAL AND BEHAVIORAL DEVELOPMENT OF A ROADRUNNER RAISED AT THE NATIONAL ZOOLOGICAL PARK. *Wilson Bull.* 83(2): 186-193, 5 figs. June 1971. *WR 143: 84*

[Taronga Zoo Park, Sydney, Australia.] Detailed descriptions are given of growth patterns, behavior, and rearing techniques from the age of 24 hours to 60 days for roadrunners (*Geococcyx californianus*).--Courtesy/ Paul A. Stewart.

Nakamura, Toru, S. Yamagishi, K. Iijima, and H. Ushiyama. [TERRITORIALITY OF *EMBERIZA YESSOENSIS* WITH A HIGH POPULATION DENSITY.] *Misc. Rep. Yamashina's Inst. Ornithol.* 6(1/2): 82-102, illus. 1970. [From Biol. Abstr. 52(18), 1971. In Japanese with English summ.] *WR 143: 84*

[Fac. Med., Shinshu Univ., Asahi, Japan.] The structure and distribution of breeding territories of *E. yessoensis*, under high population density are discussed.

Niethammer, G., and H. E. Wolters. BEMERKUNGEN ZUR GEOGRAPHISCHEN VARIATION DER SINGDROSSEL (*TURDUS PHILOMELOS*) IM WESTLICHEN EUROPA. [COMMENTS ON THE GEOGRAPHICAL VARIATION OF THE SONG THRUSH (*TURDUS PHILOMELOS*) IN WESTERN EUROPE.] *Zool. Abh.* (Dresden) 31. p. 263-269, illus. 1970. [From Biol. Abstr. 52(17), 1971. In German with English summ.] *WR 143: 84*

[Zool. Forschungsinst., Bonn, Germany.]

Oniki, Yoshika. WANDERING INTERSPECIFIC FLOCKS IN RELATION TO ANT-FOLLOWING BIRDS AT BELÉM, BRAZIL. *Condor* 73(3): 372-374. Autumn 1971. *WR 143: 84*

[Oberlin Coll., Oberlin, Ohio.]

Price, Richard E., Jr. THE RED-COCKADED WOODPECKER IN SCOTLAND COUNTY, N.C. *Chat* 35(2): 42-44, 2 figs. June 1971. *WR 143: 84*

[Piedmont Nat. Wildl. Refuge, Round Oak, Ga.] Courtesy/ Paul A. Stewart.

Ricklefs, Robert E. FORAGING BEHAVIOR OF MANGROVE SWALLOWS AT BARRO COLORADO ISLAND. *Auk* 88(3): 635-651, 5 figs. July 1971. *WR 143: 84*

[Univ. Pa., Philadelphia.] Mangrove swallows (*Iridoprocne albilinea*) foraged near their nests for their nestlings' food and at a greater distance from their nests for food for themselves. Feeding activity was reduced during the middle of the day.--Courtesy/ Paul A. Stewart.

Rohwer, Sievert A. MOLT AND THE ANNUAL CYCLE OF THE CHUCK-WILL'S-WIDOW, *CAPRIMULGUS CAROLINENSIS*. *Auk* 88(3): 485-519, 5 figs. July 1971. *WR 143: 84*

[Univ. Kans., Lawrence.] The molt and the relation of its timing to egg laying and migration are described. An explanation is provided to show why the molt occurs on the breeding grounds at the expense of raising an additional brood of young.--Courtesy/ Paul A. Stewart.

Roo, A. de, and J. Deheeger. ECOLOGY OF THE GREAT REED WARBLER, *ACROCEPHALUS ARUNDINACEUS* (L.) WINTERING IN THE SOUTHERN CONGO SAVANNAH. *Gerfaut* 59(2): 260-275. 1969. [From Bird-Banding 42(2), 1971.] *WR 143: 84*

Ruppell, G. FLUGMANOEVER DES GARTENROTSCHWANZES (*PHOENICURUS PHOENICURUS* L.). [FLIGHT MANEUVERS OF THE REDSTART (*PHOENICURUS PHOENICURUS* L.).] *Z. Vergl. Physiol.* 71(2): 190-200, illus. 1971. [From Biol. Abstr. 52(13), 1971. In German with English summ.] *WR 143: 84*

[Univ. Erlangen-Nürnberg, Erlangen, Germany.] Flight maneuvers of the redstart were analyzed by means of slow-motion pictures.

Samuel, David E. FIELD METHODS FOR DETERMINING THE SEX OF BARN SWALLOWS *(HIRUNDO RUSTICA)*. *Ohio J. Sci.* 71(2): 125-128. 1971. [From Biol. Abstr. 52(18), 1971.] *WR 143: 85*
[W. Va. Univ., Morgantown.]

Schwartz, Albert. SUBSPECIFIC VARIATION IN TWO SPECIES OF ANTILLEAN BIRDS. *Quart. J. Fla. Acad. Sci.* 33(3): 221-236. 1970. [From Biol. Abstr. 52(17), 1971.] *WR 143: 85*
[Miami-Dade Jr. Coll., Miami, Fla.] *"Columbina passerina* and *Geothlypis rostrata."*

Sick, Helmut. DER STROHSCHWANZ, *OREOPHYLAX MOREIRAE*, ANDINER FURNARIIDAE IN SUEDOSTBRASILIEN. [THE ITATIAIA SPINETAIL, *OREOPHYLAX MOREIRAE*, MOUNTAIN FURNARIIDAE IN SOUTHEAST BRAZIL.] *Bonn. Zool. Beitr.* 21(3/4): 251-268, illus. 1970. [From Biol. Abstr. 52(17), 1971. In German with Portuguese and English summ.] *WR 143: 85*
[Conselho Nac. Pesquisas, Herb. Brandeanum, Rio de Janeiro, Brazil.]

Skutch, Alexander F. LIFE HISTORY OF THE KEEL-BILLED TOUCAN. *Auk* 88(2): 381-396. Apr. 1971. *WR 143: 85*
[El Quizarrá, San Isidro del General, Costa Rica.] Information on food, voice, nest, eggs, incubation, nestlings, and sleeping for the keel-billed toucan *(Ramphastos sulphuratus)*.--Courtesy/ Paul A. Stewart.

Skutch, Alexander F. LIFE HISTORY OF THE BRIGHT-RUMPED ATTILA *ATTILA SPADICEUS*. *Ibis* 113(3): 316-322. 1971. *WR 143: 85*
[El Quizarrá, San Isidro del General, Costa Rica.] History, range, and behavior of the bright-rumped attila.

Smith, W. John. BEHAVIORAL CHARACTERISTICS OF SERPOPHAGININE TYRANNIDS. *Condor* 73(3): 259-286, 12 figs. Autumn 1971. *WR 143: 85*
[Univ. Pa., Philadelphia.] A description of the nine genera of the tyrannid subfamily Serpophaginae, recognized by Hellmayr (1927). Display behavior including vocalization indicates similarities between genera, *Serpophaga* (including *Inezia*), *Anairetes*, *Stigmatura*, and *Nesoeroulus*. *Uromyias*, two *Stigmatura*-like species, are clearly members of *Anairetes*. Other genera support the position that division between the subfamilies Serpophaginae and Euscarthminae is artificial. The apparent convergences in foraging behavior of most species with other avian families suggest their use in behavioral ecology study. Also, their complexly formed vocalizations suggest use as subjects for studies of encoding in display repertoires.--From concl.

Smogorzhevskii, L. A. [THE SWALLOW ORIENTATION ABILITY WHEN THE SUN IS INVISIBLE.] *Vestn. Zool.* 4(6): 46-49, illus. 1970. [From Biol. Abstr. 52 (17), 1971. In Russian with English summ.] *WR 143: 85*
[Kiev State Univ., Kiev, USSR.]

Snow, Barbara K., and D. W. Snow. THE FEEDING ECOLOGY OF TANAGERS AND HONEYCREEPERS IN TRINIDAD. *Auk* 88(2): 291-322, 2 figs. Apr. 1971. *WR 143: 85*
[The Old Forge, Wingrave, Aylesbury, Buckinghamshire, England.] Nearly all of the 14 spp. considered have mixed diets of insects and fruit. Closely related species show little or no overlap in their methods of procuring the insect fraction of their diets, each species having its characteristic method of foraging for insects. There is much overlap between species in methods of gathering fruit. Species eating chiefly fruit are represented by more individuals than those which are more completely insectivorous.--From summ. Courtesy/ Paul A. Stewart.

Sokolowski, Jan. OBSERWACJE PRZY GNIEZDZIE CZYZYKA *CARDUELIS SPINUS* (L.). [OBSERVATION ON THE SISKIN'S NEST *CARDUELIS SPINUS* (L.).] *Przegl. Zool.* 14(4): 370-373, illus. 1970. [From Biol. Abstr. 52(17), 1971. In Polish with English summ.] *WR 143: 86*

Todt, Dietmar. "ABSTRAKTIONSLEISTUNG" EINER GESANGLICH KORRESPONDIERENDEN ABESSINISCHEN ERDDROSSEL *(GEOKICHLA PIAGIAE* BOUVIER). [CAPABILITY OF AN ABYSSINIAN GROUNDTHRUSH TO RESPOND TO A WHISTLED SONG.] *Z. Tierpsychol.* 28(1): 59-61, illus. 1971. [From Biol. Abstr. 52(15), 1971. In German with English summ.] *WR 143: 86*
[Univ. Freiburg im Breisgau, Freiburg, Germany.] *"Geokichla piagiae."*

Traylor, Melvin A. MOLT AND MIGRATION IN *CINNYRICINCLUS LEUCOGASTER*. *J. Ornithol.* 112(1): 1-20. 1971. [From Biol. Abstr. 52(17), 1971.] *WR 143: 86*
[Field Mus. Natur. Hist., Chicago, Ill.]

Tullock, Gordon. THE COAL TIT AS A CAREFUL SHOPPER. *Amer. Natur.* 105(941): 77-80, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 86*
[Va. Polytech. Inst., Blacksburg.] *"Ernarmonia conicolana."*

Utter, James Merlin. DAILY ENERGY EXPENDITURES OF FREE-LIVING PURPLE MARTINS *(PROGNE SUBIS)* AND MOCKINGBIRDS *(MIMUS POLYGLOTTOS)* WITH A COMPARISON OF TWO NORTHERN POPULATIONS OF MOCKINGBIRDS. *Ph.D. thesis, Rutgers Univ.* 186 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(2), 1971.] *WR 143: 86*

Utter, J. M., and E. A. LeFebvre. ENERGY EXPENDITURE FOR FREE FLIGHT BY THE PURPLE MARTIN *(PROGNE SUBIS)*. *Comp. Biochem. Physiol.* 35: 713-719. 1970. [From Bird-Banding 42(2), 1971.] *WR 143: 86*

Valenciuc, Ion I. STUDIUL BIOSTATISTIC AL UNEI POPULATII DE *PASSER DOMESTICUS* L. [BIOSTATISTICAL STUDY OF A POPULATION OF *PASSER DOMESTICUS* L.] *Comun. Zool.* 1970. p. 273-279. 1970. [From Biol. Abstr. 52(15), 1971. In Romanian with French summ.] *WR 143: 86*

Von Jordans, Adolf. DIE WESTPALAEARKTISCHEN RASSEN DES FORMENKREISES *PARUS MAJOR* (AVES, PARIDAE). [THE WEST PALEARCTIC RACES OF THE GROUP *PARUS MAJOR* (AVES, PARIDAE).] *Zool. Abh.* (Dresden) 31. p. 205-225. 1970. [From Biol. Abstr. 52(17), 1971. In German.] *WR 143: 86*
[5309 Burg Morenhoven, Germany.]

Werner, Harold W. CAPE SABLE SPARROWS REDISCOVERED ON CAPE SABLE. *Auk* 88(2): 432. Apr. 1971. *WR 143: 86*
[Univ. South Fla., Tampa.] Thirty-five years after the supposed destruction of *Ammospiza mirabilis* at Cape Sable, Florida.--Courtesy/ Paul A. Stewart.

Weske, John S., and John W. Terborgh. A NEW SUBSPECIES OF CURASSOW OF THE GENUS *PAUXI* FROM PERU. *Auk* 88(2): 233-238, 1 fig. Apr. 1971. *WR 143: 86*
[Univ. Okla., Norman.] *"Pauxi unicornis koepckeae."*--Courtesy/ Paul A. Stewart.

Weydemeyer, Winton. INJURED CALLIOPE HUMMINGBIRD LIFTED BY ANOTHER. *Auk* 88(2): 431. Apr. 1971. *WR 143: 86*
[Fortine, Mont.] A male calliope hummingbird *(Stellula calliope)* grasped an injured female of its species by the bill and lifted it about three feet from the ground three times before dropping it.--Courtesy/ Paul A. Stewart.

Williamson, Penelope. FEEDING ECOLOGY OF THE RED-EYED VIREO *(VIREO OLIVACEUS)* AND ASSOCIATED FOLIAGE-GLEANING BIRDS. *Ecol. Monogr.* 41(2): 129-152, 16 figs. Spring 1971. *WR 143: 86*
[Chesapeake Bay Center for Environ. Studies, Smithsonian Inst., Box 622, Rt. 4, Edgewater, Md.] Male red-eyed vireos gathered food during the nesting season at the general height of their singing perches; whereas females gathered

food at lower levels or at the heights of their nests. The feeding behavior was different during migration than during the nesting season, with birds during migration feeding more in flocks on fruit in low trees.--Courtesy/ Paul A. Stewart.

Wolf, Larry L. PREDATORY BEHAVIOR IN MONTEZUMA OROPENDOLA. *Wilson Bull.* 83(2): 197-198. June 1971. *WR 143: 87*
[Syracuse Univ., Syracuse, N.Y.] A Montezuma oropendola *(Gymnostinops montezuma)* captured and killed a juvenile black-faced grosbeak *(Caryothraustes poliogaster).*--Courtesy/ Paul A. Stewart.

Wolf, Larry L., and Janet S. Wolf. NESTING OF THE PURPLE-THROATED CARIB HUMMINGBIRD. *Ibis* 113(3): 306-315, 1 fig. 1971. *WR 143: 87*
[Syracuse Univ., Syracuse, N.Y.] *"Eulampis jugularis."*

Yamagishi, Satoshi. [OBSERVATIONS ON THE BREEDING BIOLOGY OF *EMBERIZA CIOIDES.*] *Misc. Rep. Yamashina's Inst. Ornithol.* 6(1/2): 103-130, illus. 1970. [From Biol. Abstr. 52(18), 1971. In Japanese with English summ.] *WR 143: 87*
[Yanagimachi Middle Sch., Nagano, Japan.]

Young, Allen M. ROOSTING OF A SPOTTED ANTBIRD (FORMICARIIDAE: *HYLOPHYLAX NAEVIOIDES*) IN COSTA RICA. *Condor* 73(3): 367-368. Autumn 1971. *WR 143: 87*
[Lawrence Univ., Appleton, Wis.]

Zimmerman, John L. THE TERRITORY AND ITS DENSITY DEPENDENT EFFECT IN *SPIZA AMERICANA.* *Auk* 88(2): 591-612, 9 figs. July 1971. *WR 143: 87*
[Kans. State Univ., Manhattan.] The presence of suitable song perches and a dense cover of herbaceous vegetation are important in selection of habitat by the dickcissel. Minimum territory size was about 0.9 acre, reached at densities of 60 to 70 males per 100 acres.--Courtesy/ Paul A. Stewart.

REPTILES & AMPHIBIANS

Aleksiuk, Michael, and Kenneth W. Stewart. SEASONAL CHANGES IN THE BODY COMPOSITION OF THE GARTER SNAKE *(THAMNOPHIS SIRTALIS PARIETALIS)* AT NORTHERN LATITUDES. *Ecology* 52(3): 485-490, 5 figs. Late Spring 1971. *WR 143: 87*
[Univ. Manitoba, Winnipeg, Manitoba, Canada.] Protein and ash contents remained about constant throughout the year. Lipids were low in the spring, higher during the summer, and low again during the autumn and winter. Water content was the opposite of that of lipids, except for dehydration in the autumn and rehydration in the spring. The snakes were near starvation in May at the end of an eight-month aphagic period.--Courtesy/ Paul A. Stewart.

Andrews, Robin M. STRUCTURAL HABITAT AND TIME BUDGET OF A TROPICAL *ANOLIS* LIZARD. *Ecology* 52(2): 262-270. Early Spring 1971. *WR 143: 87*
[Univ. Kans., Lawrence.] Different intraspecific classes of *Anolis polylepis* used perches of different diameters at different heights. Perch heights of adult males and females were related to the type of activity in which the lizards were engaged.--From abstr. Courtesy/ Paul A. Stewart.

Aniola, Stefan, and Stanisław Kuśniak. OBSERWACJE ŻOŁWI BŁOTNYCH, *EMYS ORBICULARIS* L., W NATURALNYM SRODOWISKU. [OBSERVATIONS ON WATER TURTLES *EMYS ORBICULARIS* L. IN NATURAL HABITAT.] *Przegl. Zool.* 13(4): 352-356, illus. 1969. [From Biol. Abstr. 52(17), 1971. In Polish with English summ.] *WR 143: 87*
[Orzechowa 18, m. 5, Poznan, Poland.]

Badham, Judith A. ALBUMEN FORMATION IN EGGS OF THE AGAMID *AMPHIBOLURUS BARBATUS BARBATUS.* *Copeia* 1971(3): 543-545. 3 Sept. 1971. *WR 143: 87*
[Univ. Sydney, Sydney, Australia.]

Barthalmus, George Timothy. HOMING, HOME RANGE, AND THE HOMING MECHANISM OF THE NORTHERN DUSKY SALAMANDER, *DESMOGNATHUS FUSCUS FUSCUS*. *Ph.D. thesis, Pa. State Univ.* 49 p. 1970. [From Diss. Abstr. Int. B Sci. Eng. 32(2), 1971.] *WR 143: 88*

Berger, Leszek, Janina Jaskowska, and Marian Mlynarski. PLAZY I GADY--AMPHIBIA ET REPTILIA. [AMPHIBIA AND REPTILIA.] *Kat. Fauny Pol.* 39(14): 3-34. 1969. [From Biol. Abstr. 52(14), 1971. In Polish.] *WR 143: 88*
[Panstwowe Wydawnictwo Naukowe, Warsaw, Poland.] The geographical locations in Poland where 18 spp. of amphibia are documented.

Bogart, James P., and Jo Ellen Bogart. GENETIC COMPATIBILITY EXPERIMENTS BETWEEN SOME SOUTH AMERICAN ANURAN AMPHIBIANS. *Herpetologica* 27(3): 229-235. Sept. 1971. *WR 143: 88*
[La. Tech. Univ., Ruston.]

Boyd, Claude E., and C. Phillip Goodyear. THE PROTEIN CONTENT OF SOME COMMON REPTILES AND AMPHIBIANS. *Herpetologica* 27(3): 317-320. Sept. 1971. *WR 143: 88*
[Savannah River Ecol. Lab., Drawer E, Aiken, S.C.] Abstract: Interspecific variation in the protein content of herptiles is slight. Protein levels of 23 species of reptiles and amphibians ranged from 62.6--83.2% ($\bar{x}$ = 74.7 $\pm$ 0.5%). These levels are similar to those reported for species of several other vertebrate groups. Protein intake by carnivores feeding on amphibians and reptiles, as well as other vertebrates, is proportional to the amount of food consumed since there appears to be relatively small interspecific variation in protein content.

Branson, Branley A., Donald A. Batch, and Charles J. Moore. LIST OF AMPHIBIANS AND REPTILES FROM TIGHT HOLLOW IN EAST-CENTRAL KENTUCKY. *Trans. Ky. Acad. Sci.* 31(3/4): 73-78, illus. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 88*
[East Ky. Univ., Richmond.]

Brattstrom, Bayard H. SOCIAL AND THERMOREGULATORY BEHAVIOR OF THE BEARDED DRAGON, *AMPHIBOLURUS BARBATUS*. *Copeia* 1971(3): 484-497, 8 figs. 3 Sept. 1971. *WR 143: 88*
[Calif. State Coll., Fullerton.] Some 73 behavioral postures or positions are described for the Australian bearded dragon, *Amphibolurus barbatus* based on observations made in the field, in outdoor pens and in laboratory aquaria. General behavioral postures may serve different functions in different sequences. Thus, the opening of the mouth may serve a thermoregulatory (pant), social (defensive display) or a maintenance (lick, drink, yawn) function. *A. barbatus* is territorial in the field but loosely hierarchial in enclosed crowded situations.--From abstr.

Brattstrom, Bayard H. CRITICAL THERMAL MAXIMA OF SOME AUSTRALIAN SKINKS. *Copeia* 1971(3): 554-557, 2 figs. 3 Sept. 1971. *WR 143: 88*
[Calif. State Coll., Fullerton.] *"Lygosoma decresiensis, L. entrecasteauxi, L. quoyi, L. mustelinum, L. metallicum* and *Tropidophorus queenslandiae."*

Brown, Lauren E. NATURAL HYBRIDS BETWEEN TWO TOAD SPECIES IN ALABAMA. *Quart. J. Fla. Acad. Sci.* 32(4): 284-290, illus. 1969/1970. [From Biol. Abstr. 52(14), 1971.] *WR 143: 88*
[Ill. State Univ., Normal.] *"Bufo terrestris* and *B. woodhousei."*

Brown, Walter C., and Angel C. Alcala. THE ZOOGEOGRAPHY OF THE HERPETOFAUNA OF THE PHILIPPINE ISLANDS, A FRINGING ARCHIPELAGO. *Proc. Calif. Acad. Sci.* 38(4): 105-130, illus. 1970. [From Biol. Abstr. 52(18), 1971.] *WR 143: 88*
[Stanford Univ., Stanford, Calif.]

Burghardt, Gordon M. A SUPPLEMENTARY NOTE ON THE FEEDING BEHAVIOR OF THE LIZARD *ANOLIS CAROLINENSIS*. *Psychonomic Sci. Sect. Anim. Physiol. Psychol.* 23(1A): 49. 1971. [From Biol. Abstr. 52(17), 1971.] *WR 143: 89*
[Univ. Tenn., Knoxville.]

Chiu, K. W., and W. G. Lynn. THE HYPOPHYSIS-GONAD RELATION IN THE GLOSSY SNAKE, *ARIZONA ELEGANS*. *Herpetologica* 27(3): 303-307. Sept. 1971. *WR 143: 89*
[Chung Chi Coll., Chinese Univ., Hong Kong.]

Clark, Donald R., Jr. THE STRATEGY OF TAIL-AUTOTOMY IN THE GROUND SKINK, *LYGOSOMA LATERALE*. *J. Exp. Zool.* 176(3): 295-302, illus. 1971. [From Biol. Abstr. 52(14), 1971.] *WR 143: 89*
[Tex. A&M Univ., College Station.]

Collins, Richard F., and Charles C. Carpenter. ORGAN POSITION-VENTRAL SCUTE RELATIONSHIP IN THE WATER MOCCASIN *(AGKISTRODON PISCIVORUS LEUCOSTOMA)* WITH NOTES ON FOOD HABITS AND DISTRIBUTION. *Proc. Okla. Acad. Sci.* 49: 15-18, illus. 1970. [From Biol. Abstr. 52(17), 1971.] *WR 143: 89*
[Univ. Okla., Norman.]

Colnaghi, George L. PORTIONING OF A RESTRICTED FOOD SOURCE IN A TERRITORIAL IGUANID *(ANOLIS CAROLINENSIS)*. *Psychonomic Sci. Sect. Anim. Physiol. Psychol.* 23(1A): 59-60, illus. 1971. [From Biol. Abstr. 52(17), 1971.] *WR 143: 89*
[Univ. Princeton, Princeton, N.J.]

Cupp, Paul V., Jr. FALL COURTSHIP OF THE GREEN SALAMANDER, *ANEIDES AENEUS*. *Herpetologica* 27(3): 308-310. Sept. 1971. *WR 143: 89*
[Clemson Univ., Clemson, S.C.] Abstract: Diurnal fall courtship in *Aneides aeneus* was observed in their natural habitat. The presence of a distinct circling pattern as a major part of the courtship was noted. The male was active in keeping the female in the circling pattern with nudging and biting. A double-peaked spermatophore base was observed. Males possessed a well-developed mental hedonic gland-cluster and an instance of aggressive behavior between males occurred.

Danielyan, F. D. [A COMPARATIVE STUDY OF THE POPULATION DENSITY AND MIGRATIONS OF PARTHENOGENETIC AND BISEXUAL ROCK LIZARDS IN THE ARMENIAN SSR.] *Zool. Zh.* 50(1): 145-147, illus. 1971. [From Biol. Abstr. 52(17), 1971. In Russian with English summ.] *WR 143: 89*
[Yerevan State Univ., Yerevan, USSR.]

Dinsmore, James J. REPTILES OF LITTLE TOBAGO ISLAND, WEST INDIES. *Quart. J. Fla. Acad. Sci.* 32(4): 307-309. 1969/1970. [From Biol. Abstr. 52(14), 1971.] *WR 143: 89*
[Univ. Fla., Gainesville.]

Dixon, James R., Carl S. Lieb, and Chesley A. Ketchersid. A NEW LIZARD OF THE GENUS *CNEMIDOPHORUS* (TEIIDAE) FROM QUERETARO, MEXICO. *Herpetologica* 27(3): 344-354. Sept. 1971. *WR 143: 89*
[Tex. A&M Univ., College Station.] Several aspects of *Cnemidophorus gularis colossus* natural history are considered. Average egg clutch size in Queretaran populations occurring at lower elevations (500-1100 m) is shown to be smaller than the average egg clutch size in the higher areas (1370-1550 m). Elevational differences in choice of food items are described and observations on habitat preference, predation, and active body temperatures are briefly discussed.--From abstr.

Echelle, Anthony A., Alice F. Echelle, and Henry S. Fitch. A COMPARATIVE ANALYSIS OF AGGRESSIVE DISPLAY IN NINE SPECIES OF COSTA RICAN *ANOLIS*. *Herpetologica* 27(3): 271-288, 4 figs. Sept. 1971. *WR 143: 89*
[Univ. Okla. Biol. Sta., Willis.] Abstract: The aggressive displays of nine species of Costa Rican *Anolis* are presented. Emphasis is given to

detailed description of dewlap characteristics and display-action-patterns and to an attempt to relate the displays to the phylogeny and ecology of the various species. Evidence suggests that the display tends to be simple in species of simple anole faunas and complex in those of complex faunas. This is interpreted as resulting from the need for species recognition. Complex display in a wide ranging species that contacts a large number of other species would reduce the probability of confusion in different parts of the geographical range. Examples are given of possible effects of the habitat on display characteristics. Display behavior seems to be useful as a taxonomic tool at the level of the species group.

Echelle, Anthony A., Alice F. Echelle, and Henry S. Fitch. A NEW ANOLE FROM COSTA RICA. *Herpetologica* 27(3): 354-362, 2 figs. Sept. 1971. *WR 143: 90*
[Univ. Okla. Biol. Sta., Willis.] Abstract: *Anolis carpenteri*, a small, green species with an orange dewlap and smooth ventrals, is named from the Río Reventazón, Turrialba, Cartago Province, Costa Rica. Resemblance is closest to *A. fuscoauratus, A. biscutiger, A. limifrons*, and *A. trochilus* (currently considered a synonym of *limifrons*), but *carpenteri* differs from each in several well-defined characters. The species was found in relatively open riparian habitat below the high water mark and was scansorial on lichen-covered rocks, tree trunks and shrubs. The territorial display is described.

Fleet, Robert R., and James R. Dixon. GEOGRAPHIC VARIATION WITHIN THE LONG-TAILED GROUP OF THE GLOSSY SNAKE, *ARIZONA ELEGANS* KENNICOTT. *Herpetologica* 27(3): 295-302, 4 figs. Sept. 1971. *WR 143: 90*
[Tex. A&M Univ., College Station.]

Fuhn, I. E. AMFIBII SI REPTILE DIN ZONA VIITORULUI LAC DE BARAJ DE LA PORTILE DE FIER. [AMPHIBIANS AND REPTILES FROM THE ZONE OF THE FUTURE DAM IN PORTILE DE FIER.] *Stud. Cercet. Biol. Ser. Zool.* 22(4): 321-331. 1970. [From Biol. Abstr. 52(13), 1971. In Romanian with English and French summ.] *WR 143: 90*
[Inst. Biol. "Traian Savulescu", Bucharest, Romania.]

Goldberg, Stephen R. REPRODUCTION IN THE SHORT-HORNED LIZARD *PHRYNOSOMA DOUGLASSI* IN ARIZONA. *Herpetologica* 27(3): 311-314, 2 figs. Sept. 1971. *WR 143: 90*
[Whittier Coll., Whittier, Calif.] Abstract: Investigation of seasonal changes in the gonads of *Phrynosoma douglassi* indicates breeding takes place in the late winter to early spring in Arizona. Testes are at maximum sizes when the lizards emerge from hibernation. Regression is completed by mid-May and recrudescence occurs during fall. Ovulation occurs in May. Young are born in late July to early August after a gestation period of about three months. Females average 16.7 young.

Goodyear, C. Phillip. Y-AXIS ORIENTATION OF THE OAK TOAD, *BUFO QUERCICUS*. *Herpetologica* 27(3): 320-323, 1 fig. Sept. 1971. *WR 143: 90*
[Savannah River Ecol. Lab., Drawer E, Aiken, S.C.] Abstract: Adult oak toads collected from a breeding congregation and tested in an aquatic arena in full view of the sun showed no directional preference. The toads were retested in both aquatic and terrestrial situations after two weeks in artificial environments which provided both terrestrial and aquatic compartments. After training, toads moved on a compass course in an inland direction in both aquatic and terrestrial tests.

Gorman, George C., Paul Light, Herbert C. Dessauer, and Julius O. Boos. REPRODUCTIVE FAILURE AMONG THE HYBRIDIZING *ANOLIS* LIZARDS OF TRINIDAD. *Syst. Zool.* 20(1): 1-18, illus. 1971. [From Biol. Abstr. 52(18), 1971.] *WR 143: 90*
[Mus. Vertebr. Zool., Univ. Calif., Berkeley.] *"Anolis trinitatis* and *A. aeneus."*

Groschaft, Jindřich, and Vlastimil Barus. STUDIES ON THE HELMINTH FAUNA OF CROCODILES IN CUBA. *Vestn. Cesk. Spolecnosti Zool.* 34(4): 289-303. 1970. [From Biol. Abstr. 52(15), 1971.] *WR 143: 91*
[Inst. Parasitol., Czech. Acad. Sci., Prague, Czechoslovakia.]

Grubb, Peter. COMPARATIVE NOTES ON THE BEHAVIOR OF *GEOCHELONE SULCATA*. *Herpetologica* 27(3): 328-333, 1 fig. Sept. 1971. *WR 143: 91*
[Univ. Ghana, P.O. Box 67, Legon, Accra, Ghana.] Abstract: Mating behavior in the spurred tortoise *Geochelone sulcata* is described and is shown to differ in several ways from that of *G. gigantea*. An account is given of the agonistic butting behavior exhibited by both sexes.

Gyi, Khin Mg. THE OCCURRENCE OF *TYLOTOTRITON VERRUCOSUS* ANDERSON (1871) (URODELA: SALAMANDRIAE) AT TAUNGGYI, BURMA. *Union Burma J. Life Sci.* 2(1): 23-26. 1969. [From Biol. Abstr. 52(14), 1971.] *WR 143: 91*
[Taunggyi Coll., Taunggyi, Burma.]

Hemmer, Helmut, and Rudolf Schipp. ZUM BEUTEFANGVERHALTEN DES TOKEHS *(GEKKO GECKO L.)*. [THE PREDATORY BEHAVIOUR OF THE TOKAY *(GEKKO GECKO L.)*.] *Z. Tierpsychol.* 27(5): 591-609, illus. 1970. [From Biol. Abstr. 52(15), 1971. In German with English summ.] *WR 143: 91*
[Johannes Gutenberg-Univ., Mainz, Germany.]

Hristovski, Nikola D. PARASITISATION OF THE TOAD *BUFO VIRIDIS* LAURENTI BY NEMATODES AT BITOLA (MACEDONIA, YUGOSLAVIA). *Fragm. Balcanica Mus. Macedonici Sci. Natur.* 7(8): 61-69. 1969. [From Biol. Abstr. 52(14), 1971. In English with Russian summ.] *WR 143: 91*
[Univ. Skopje, Skopje, Yugoslavia.]

Jackson, Crawford G., Jr., and Arnold Ross. MOLLUSCAN FOULING OF THE ORNATE DIAMONDBACK TERRAPIN, *MALACLEMYS TERRAPIN MACROSPILOTA* HAY. *Herpetologica* 27(3): 341-344, 1 fig. Sept. 1971. *WR 143: 91*
[San Diego State Coll., San Diego, Calif.]

Jacobson, Elliot R., and Walter G. Whitford. PHYSIOLOGICAL RESPONSES TO TEMPERATURE IN THE PATCH-NOSED SNAKE, *SALVADORA HEXALEPIS*. *Herpetologica* 27(3): 289-295, 2 figs. Sept. 1971. *WR 143: 91*
[Univ. Mo., Columbia.]

Jones, Owilym S. NOTES ON THE REPTILES AND AMPHIBIANS OBSERVED ON A STRIP-MINED STUDY AREA IN PIKE COUNTY, INDIANA. *Ind. Audubon Quart.* 49(2): 48-50. May 1971. *WR 143: 91*
[3125 Celadon Lane, Falls Church, Va.] Annotated list of 19 spp.

Kramer, David Carl. SEASONAL MOVEMENTS OF WESTERN CHORUS FROGS *(PSEUDACRIS TRISERIATA TRISERIATA)* TAGGED WITH RADIOACTIVE COBALT. *Ed.D. thesis, Ball State Univ.* 131 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 91*

Lanmeree, Liesbeth. LIZARDS OF THE GENUS *CNEMIDOPHORUS* FROM THE LEEWARD GROUP AND THE ADJACENT MAINLAND OF SOUTH AMERICA. *Uitgaven Natuurwetensch. Studiekring Suriname Ned. Antillen* 61. p. 46-72, illus. 1970. [From Biol. Abstr. 52(14), 1971.] *WR 143: 91*
[Zool. Mus., Utrecht, Netherlands.]

Leviton, Alan E. CONTRIBUTIONS TO A REVIEW OF PHILIPPINE SNAKES: XI. THE SNAKES OF THE GENUS *BOIGA* (SYSTEMATICS). *Philippine J. Sci.* 97(3): 291-314. 1968. [From Biol. Abstr. 52(18), 1971.] *WR 143: 91*
[Calif. Acad. Sci., San Francisco.]

Littlejohn, M. J. A REAPPRAISAL OF MATING CALL DIFFERENTIATION IN *HYLA CADAVERINA* (=*HYLA CALIFORNIAE*) AND *HYLA REGILLA*. *Evolution* 25(1): 98-102, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 92*
[Univ. Melbourne, Parkville, Victoria, Australia.]

Loewenstein, Matthew S., Steven H. Lamm, and Eugene J. Gangarosa. SALMONELLOSIS ASSOCIATED WITH TURTLES. *J. Infect. Dis.* 124(4): 433. Oct. 1971. *WR 143: 92*
[Center for Disease Control, Atlanta, Ga.] Extrapolation of data from five surveys indicates that 300,000 (15%) of the estimated two million cases of salmonellosis in the USA are associated with turtles.

Marion, Ken R., and Owen J. Sexton. THE REPRODUCTIVE CYCLE OF THE LIZARD *SCELOPORUS MALACHITICUS* IN COSTA RICA. *Copeia* 1971(3): 517-526, 4 figs. 3 Sept. 1971. *WR 143: 92*
[Univ. Mo., St. Louis.] The viviparous *Sceloporus malachiticus* undergoes an annual ovarian cycle, leading to one brood of young. Yolked ovarian follicles were first noted in the early wet season during June. June, July, and August were months of follicular vitellogenesis and growth, with ovulation occurring in early September. Embryos were carried for a considerable length of time, with the majority being born in the early dry season during late January and February. Up to 50% of the parental weight at this time were embryos. Number of embryos was strongly correlated to female size, and the average of all lizards collected was six young. Young females mature around 65 mm snout-vent length. The natural history of *S. malachiticus* is discussed with respect to its adaptations for tropical, high altitude environment.—From abstr.

Masiakowski, Piotr. PLAZY BEZOGONOWE POBRZEZA BALTYKU W OKOLICY LAZOW. [ANURAN AMPHIBIANS OF THE BALTIC SEASIDE NEAR LAZY.] *Przegl. Zool.* 14(2): 188-189. 1970. [From Biol. Abstr. 52(15), 1971. In Polish with English summ.] *WR 143: 92*

McGinnis, Samuel M., and Michael Falkenstein. THERMOREGULATORY BEHAVIOR IN THREE SYMPATRIC SPECIES OF IGUANID LIZARDS. *Copeia* 1971(3): 552-554, 1 fig. 3 Sept. 1971. *WR 143: 92*
[Calif. State Coll., Hayward.] *"Dipsosaurus dorsalis, Sauromalus obesus,* and *Sceloporus magister."*

Mecham, John S. VOCALIZATIONS OF THE LEOPARD FROG, *RANA PIPIENS*, AND THREE RELATED MEXICAN SPECIES. *Copeia* 1971(3): 505-516, 5 figs. 3 Sept. 1971. *WR 143: 92*
[Tex. Tech. Univ., Lubbock.] Abstract: Vocalizations and their structure in the *Rana pipiens* complex are reviewed and a revised classification of call types is presented. Types of calls are the distress call, release call, mating trill, and various chuckle calls including the grunt, grind, and low trill. A particular call sequence involving mating trills, grunts, grinds, and low trills can be recognized in many populations. Vocalizations of the Mexican species *Rana montezumae, Rana dunni,* and *Rana megapoda* are described. These forms appear to lack well defined grinds in call sequences, but this also appears to be true of certain *R. pipiens* populations. Mating trills, grunts, low trills, and release calls of the three Mexican species all show structural similarities to the corresponding vocalizations of *R. pipiens* and are consistent with inclusion of the Mexican species within the *R. pipiens* species group. Vocalizations of certain *R. pipiens* in southwestern New Mexico, southern Arizona, and northwestern Mexico along the Sierra Madre Occidental show pronounced similarities to those of the Mexican species. It is suggested that call similarities between the three Mexican species reflect not so much a close relationship as a conservation of a call pattern primitive to the *R. pipiens* species group. There appears to be some functional correspondence between the various chuckle call elements of leopard frogs and the warning and territorial calls of bullfrogs.

Mermod, C. DOMAINE VITAL ET DÉPLACEMENTS CHEZ *CERASTES VIPERA* (L.) ET *CERASTES CERASTES* (L.) (REPTILIA, VIPERIDAE). [LIVING AREA AND DISPLACEMENT ACTIVITY OF *CERASTES VIPERA* (L.) AND *CERASTES CERASTES* (L.) (REPTILIA, VIPERIDAE).] *Rev. Suisse Zool.* 77(3): 555-562, illus. 1970. [From Biol. Abstr. 52(13), 1971. In French with English and German summ.] *WR 143: 95*
[Inst. Biol. Anim., Fribourg, Switzerland.]

Moehn, Loren Duane. THE EFFECT OF QUALITY OF LIGHT ON AGONISTIC BEHAVIOR OF IGUANID LIZARDS. *Ph.D. thesis, Univ. Ill.* 82 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(2), 1971.] *WR 143: 93*

Northcutt, R. Glenn, and James Edward Heath. PERFORMANCE OF CAIMANS IN A T-MAZE. *Copeia* 1971(3): 557-560, 1 fig. 3 Sept. 1971. *WR 143: 93*
[Case Western Reserve Univ., Cleveland, Ohio.] *"Caiman sclerops."*

Nussbaum, Ronald A., and Edmund D. Brodie, Jr. THE TAXONOMIC STATUS OF THE ROUGH-SKINNED NEWT, *TARICHA GRANULOSA* (SKILTON), IN THE ROCKY MOUNTAINS. *Herpetologica* 27(3): 260-270, 2 figs. Sept. 1971. *WR 143: 93*
[Oreg. State Univ., Corvallis.]

Parker, William S. ECOLOGICAL OBSERVATIONS ON THE REGAL HORNED LIZARD *(PHRYNOSOMA SOLARE)* IN ARIZONA. *Herpetologica* 27(3): 333-338, 2 figs. Sept. 1971. *WR 143: 93*
[Univ. Utah, Salt Lake City.] Abstract: The regal horned lizard preferred a Sonoran Desert mountain valley as optimum microhabitat. Diurnal activity was greatest between 0600 and 0900 hr. Eggs were deposited in late July or early August and numbered 17 to 25. Apparently only one clutch is laid annually. Mean growth rate varied from 0.25 mm/day in first-year lizards to 0.04 mm/day in adults. Defensive behavior is described.

Patterson, Robert. VISUAL CLIFF PERCEPTION IN TORTOISES. *Herpetologica* 27(3): 339-341. Sept. 1971. *WR 143: 93*
[Calif. State Coll., Fullerton.] Abstract: The desert tortoise, *Gopherus agassizi*, Berlandier's tortoise, *Gopherus berlandieri*, and gopher tortoise, *Gopherus polyphemus*, respond to a visual cliff by avoidance of the deep cliff. These tortoises have been shown to have no turning bias and appear unaffected by the use of blue and white and red and white patterns of squares upon the visual cliff. The perception of depth when used in conjunction with forelimb tactile sensing may be related to avoidance of falling.

Pengilley, R. K. CALLING AND ASSOCIATED BEHAVIOUR OF SOME SPECIES OF *PSEUDOPHRYNE* (ANURA: LEPTODACTYLIDAE). *J. Zool.* (London) 163(1): 73-92, illus. 1971. [From Biol. Abstr. 52(15), 1971.] *WR 143: 93*
[Australian Nat. Univ., Canberra, Australia.]

Pengilley, R. K. THE FOOD OF SOME AUSTRALIAN ANURANS (AMPHIBIA). *J. Zool.* (London) 163(1): 93-103, illus. 1971. [From Biol. Abstr. 52(16), 1971.] *WR 143: 93*
[Australian Nat. Univ., Canberra, Australia.] Analysis of the stomach contents of adults of 3 spp. of the genus *Pseudophryne* (Anura: Leptodactylidae) occurring in south-eastern New South Wales.

Pianka, Eric R. ECOLOGY OF THE AGAMID LIZARD *AMPHIBOLURUS ISOLEPIS* IN WESTERN AUSTRALIA. *Copeia* 1971(3): 527-536, 8 figs. 3 Sept. 1971. *WR 143: 93*
[Univ. Tex., Austin.] Habitat and microhabitat, daily and seasonal patterns of activity, food, reproduction, and predators and competitors of *Amphibolurus isolepis*.

Pollack, Emanuel D. A SIMPLE METHOD FOR THE REMOVAL OF PROTOZOAN PARASITES FROM *RANA PIPIENS* LARVAE. *Copeia* 1971(3): 557. 3 Sept. 1971. *WR 143: 93*
[Rose F. Kennedy Center, 1410 Pelham Parkway South, Bronx, N.Y.]

Prieto, Andrew A., Jr., and Walter G. Whitford. PHYSIOLOGICAL RESPONSES TO TEMPERATURE IN THE HORNED LIZARDS, *PHRYNOSOMA CORNUTUM* AND *PHRYNOSOMA DOUGLASSII*. *Copeia* 1971(3): 498-504, 3 figs. 3 Sept. 1971. *WR 143: 94*
[Univ. Mo., Columbia.]

Roux-Estève, Rolande. LES SERPENTS DE LA RÉGION DE LAMTO (CÔTE-D'IVOIRE). [THE SNAKES OF THE LAMTO REGION (IVORY COAST).] *Ann. Univ. Abidjan Ser. E Ecol.* 2(1): 81-140, illus. 1969. [From Biol. Abstr. 52(17), 1971. In French.] *WR 143: 94*
[Nat. Mus. Natur. Hist., Paris, France.]

Schmidt, Robert S. A MODEL OF THE CENTRAL MECHANISMS OF MALE ANURAN ACOUSTIC BEHAVIOR. *Behaviour* 39(2-4): 288-317, 15 figs. 1971. In English with German summ. *WR 143: 94*
[Loyola Univ. Stritch School Med., Maywood, Ill.] Experiments on anuran acoustic mechanisms are described for *Rana pipiens* and two species of *Hyla*. These involve brain lesions, brain stimulations, and the recording of auditory responses from the medulla. These data, as well as data from the literature, are summarized and correlated in the form of a preliminary model of male anuran acoustic mechanisms.--From summ.

Schmidt, Robert S. NEURAL MECHANISMS OF MATING CALL ORIENTATION IN FEMALE TOADS *(BUFO AMERICANUS)*. *Copeia* 1971(3): 545-548, 1 fig. 3 Sept. 1971. *WR 143: 94*
[Loyola Univ. Stritch School Med., Maywood, Ill.]

Schoener, Thomas W. SIZE PATTERNS IN WEST INDIAN *ANOLIS* LIZARDS: II. CORRELATIONS WITH THE SIZES OF PARTICULAR SYMPATRIC SPECIES: DISPLACEMENT AND CONVERGENCE. *Amer. Natur.* 104(936): 155-174, illus. 1970. [From Biol. Abstr. 52(13), 1971.] *WR 143: 94*
[Harvard Univ., Cambridge, Mass.] Differences in head length and snout-vent length were computed for all combinations of *Anolis* species taken 2 at a time on the Greater Antilles.

Sexton, Owen J., Edward P. Ortleb, Loline M. Hathaway, Royce E. Ballinger, and Paul Licht. REPRODUCTIVE CYCLES OF THREE SPECIES OF ANOLINE LIZARDS FROM THE ISTHMUS OF PANAMA. *Ecology* 52(2): 201-215, 8 figs. Early Spring 1971. *WR 143: 94*
[Washington Univ., St. Louis, Mo.] Females of all species were reproductively active during the wet season. The testes of males of *Anolis limifrons*, *A. tropidogaster*, and *A. auratus* had mature spermatosoa during the dry season, but mean testis weight was lower than during the wet season. Changes in the males occurred before changes in the females.--Courtesy/ Paul A. Stewart.

Siboulet, R. AMPHIBIENS D'ALGÉRIE. (1). LES AMPHIBIENS DU TASSILI DES AJJERS: SUR LA PRÉSENCE DE *BUFO REGULARIS* REUS. [THE AMPHIBIANS OF ALGERIA. (1). THE AMPHIBIANS OF THE TASSILI OF AJJERS: ON THE PRESENCE OF *BUFO REGULARIS* REUSS.] *Bull. Soc. Hist. Natur. Afr. Nord* 57(3/4): 171-174. 1966/1969. [From Biol. Abstr. 52(15), 1971. In French.] *WR 143: 94*
[Lab. Biol., Fac. Sci., Algiers, Algeria.]

Stuart, L. C. COMMENTS ON THE MALACHITE *SCELOPORUS* (REPTILIA: SAURIA: IGUANIDAE) OF SOUTHERN MEXICO AND GUATEMALA. *Herpetologica* 27(3): 235-259, 1 fig. Sept. 1971. *WR 143: 94*
[Chalet 2945, Panajachel, Solola, Guatemala.]

Tolbert, Jerome V. THE ROLE OF THE THYROID GLAND IN REGULATING SPERMATOGENESIS IN THE LIZARD, *XANTUSIA*. *Ph.D. thesis, Catholic Univ.* 59 p. 1971. [From Diss. Abstr. Int. B Sci. Eng. 32(3), 1971.] *WR 143: 94*

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